# #MDXPD

## PRODUCT DESIGN 2017

**Middlesex University** Faculty of Science and Technology

Middlesex
University
London

**Welcome** to Middlesex University's third annual Product Design magazine. The magazine extends the idea of a 'catalogue' of graduating students' work into a full magazine highlighting a broader range of work from the students and staff; events that MDXPD has been involved with; questions about Product Design in general; profiles of staff and partner experts; advice for potential Product Design students and lots more.

A lot has happened this year at **MDXPD**. A new building, studio and labs; major national and international awards, and a revalidated pair of courses, updated to ensure they are leading-edge and fit-for-purpose for the next 6 years! We've got a most intriguing and diverse set of final year projects on show in the magazine and at New Designers. We thrilled to have a couple of this year's Design Engineering graduates' projects showing with us, as well.

The projects, as always, range across sectors, but all explore bringing people and technology together in meaningful, prescient ways. Throughout the course we work on complex design challenges, and with collaborative project partners to create projects and experiences that challenge our students, and help build them into graduates who are creative, technically fluent and flexible designers; able to navigate the ever-changing professional world, and able to contribute positively to future changes. Read about our new building, studio and labs later in the magazine – they've helped further enhance our learning and teaching environment and create a vibrant environment for our students.

The outcomes of our creative conversations about the future of Product Design, and Engineering, with professional partners, students, professional bodies and the broader design and engineering education sector have helped to shape our revalidation. BA Product Design has retained its title, and our BSc Product Design becomes BEng/MEng Product Design Engineering, which will better reflect our focus on physical computing and mechanical design on the course, and better support our graduates' employment pathways. Both courses will build on our areas of particular strength, shown by our students: high level of skills, both digital and physical; very high standard graphic ability; a high level of industry engagement within the courses; the students' engagement with the public through events, excellent process, user research, prototyping and model making – all within a challenging, rewarding and supportive experience. We aim to reinforce these strengths, and the existing fundamentals of design, while developing emerging practice areas.

Product Design, and Engineering, are fluid and evolving disciplines. We are in a period where the definition of a product and the responsibilities of designer/ engineers have widened and deepened. We are in an increasingly connected and complex world, and it is, therefore, critical that the contemporary Product Designer and Product Design Engineer are both technologically enabled and contextually sensitive. The central philosophy of MDXPD/E - INNOVATION through *"bringing people and technology together in meaningful ways"* ensures that the driver behind both courses is consistent and human-centred, always pushing students and practice to apply design and engineering in societally beneficial ways.

A huge thanks, as always to all our collaborative project partners, our Guest Lecturers and everyone who has contributed through the year. Have a dig around at some of the highlights of our year, find out more about our work and upcoming events and we hope you'll join the conversation with us at New Designers, at our Open Days, at our Open Guest Lectures, at our studios, or by email.

Best wishes and iechyd da,

**Wyn** | MDXPD/E Course Leader

# INTRODUCTION TO #MDXPD/E

We live in a complex, fluid world, swirling with challenges and opportunities. Design is one of the ways we can approach these opportunities.

We are material creatures, in a material world. The 'things' that surround us, and drive us are increasingly interwoven with the virtual 'stuff' that has come to connect us. This is subject to constant change and evolution. Change is always the fundament in life; in society and technology; in design and innovation. The puzzle is how to mediate that change for specific and holistic good. How to explore and navigate pathways towards creating new things that have a positive impact, that 'make the world a better place…'. A Product Designer can be an important part of this exploration.

There are many, unresolved, ways to think about 'Product', 'Design' and a 'Product Designer/ Engineer', but, regardless of any particular interpretation, we at MDXPD/E think there are some key skills, experiences and attributes that a Product Designer/Engineer needs.

Build skills in design thinking, design & technological craft and professional practice. Build experiences through varied, wide-spectrum exploration, focused sectoral exercises and live industry collaborations. Nurture an attitude of imagination, collaboration, sharing, story-telling, curiosity, ingenuity, perseverance, courage & resilience. The watchwords of gumption, humour and grit will go a long way to helping you on your way as a Product Designer/ Engineer!

**Read more about our MDXPD/E course at:** *www.mdx.ac.uk/ courses/undergraduate/ product-design*

# CONTENTS

# #DataInformsDesign

Staff at the School of Science & Technology are actively involved in professional practice and research. **Helena Ambrosio,** Associate Lecturer in Product Design, details an ongoing cross-discipline collaboration combining data-driven algorithms with 3D Printed Ceramics.
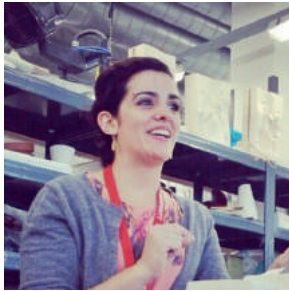


> What if it was possible to embed data in objects? What metaphors could be created? Could it be used to customize products? Would it enable a moderated co-creation between consumer and designer?

The use of data is becoming pervasive in our everyday lives. Weather data, traffic data, personal data and much more. Even insignificant actions, such as a click on a webpage or a search in Google Maps, create data that is used to tailor advertising on future websites visited and make a detailed consumer profile.

Data also allows us to create physical objects in a more direct manner than was possible 75 years ago. The advent of computer numerical control (CNC) and computer aided design (CAD) meant that a data file created in the computer could be fed directly to a machine that then produces a form either by removing swarf from a block of material or by adding material. The latter process, called additive manufacturing, is commonly known as 3D printing. The advances in 3D printing and the ubiquitous presence of data spur interesting opportunities for the design industry. What if it was possible to embed data in objects? What metaphors could be created? Could it be used to customize products? Would it enable a moderated co-creation between consumer and designer?

Our 'data informs design' project aims at exploring the above questions. The project is a collaboration between the disciplines of product design and computer science. Led by associate lecturer Helena Ambrosio with Michael Heeney, the programming was done by computer science students Timbo Cole, Adam Jarzebak and Nick Fitton.

In this first attempt, live Twitter data about Middlesex University is collected and analysed by a script that counts the number of tweets per hour, per day over a

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period of seven days (week). This information is collected by another script that uses the data to generate a computer model. These models are fed into a 3D potter that builds the ceramic designs layer by layer. On the resulting object, a vase, the bumps represent spikes in Twitter activity.

The project sits between data sculpture and data visualization. There is a level of information that can be derived by looking at the vases. For example, there is a clear distinction between night and day. Furthermore, looking the different weeks (vases) one can also find patterns and connections such as the fact that Saturday and Sunday are usually quiet times for Twitter activity about the university.

However, the vases are more than just data visualisations, or data physicalisations as it's a

three dimensional object. After being printed the vases are glazed to make unique works of art. The translucent celadon-like green glaze used makes reference to fourteen century ceramics, thus attempting to connect the past with the future. Using a material that is long-lasting and a form that has been part of our object landscape for thousands of years means users intuitively know how to identify and interact with the object.

This project has just started and more work needs to be done. We are investigating the possibilities and limits of the ceramic 3D printer; seeing how we can use algorithms to generate organic complex forms; brainstorming what types of data can be used; then, most importantly we want to explore how to connect the form algorithms with the data to create objects that are the

meaningful embodiment of data that evoke a deep emotional and intellectual response by the public.

**Follow Helena on Twitter**
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# #mdxpd Profile & Interview

Here is an interview with MDXPD Graduate **Adam Amos,** Senior Client & Project Manager for *Method* – A Global Strategic Design consultancy



### You are?

Adam Amos. I am a Senior Client & Project Manager for Method – A Global Strategic Design consultancy. I previously worked at Native Design – A global innovation design company. I have designed award winning luxury modular homes for Huf Haus Gmbh & international architecture and house building company, and have started two started small businesses myself.

I am also a father to a beautiful 2 year old girl (Lily), partner to my Girlfriend Charly, and a friend to anyone who needs it.

### Why Product Design?

From as early as I can remember I loved design. I always wanted to know how things worked and why things were the way they were. I was insatiably curious. At school this led me to study a mixture of science and the arts in order to understand the facts and realities of the world we live in and the space to imagine and create.

A product design degree was the perfect opportunity for me to continue to eat up knowledge across a boundary-less discipline, understand the interplay between human behavior, technology and the world around us and importantly, the skills needed to help improve it.

### What's a standard day like for you as a Designer?

It can vary dramatically depending on the client/ project I am working on.

Currently, start the day by running the cross team (Design/ Engineering / Client project team) 'Standup' meeting. This sets the tone and pace for the day, highlights key focus areas, any issues in anyone's path, identify who can help resolve or who is impacted by issues or delays. It is essentially a daily alignment and communication tool to keep people aware of the wider effort and the client

comfortable with how the project is going.

The rest of the day can slide between stakeholder management meetings, tracking effort vs budgets, tracking deliverables against contracts, Design reviews of ongoing work and generally questioning various parties on why we are doing what we are doing, why it will be of value for the end user and how it will help achieve business objectives.

### What's your favourite design tool?

1. Pen & white board: Communication is the key to any challenge and these two things can help provide clarity when ambiguity is fierce.

2. Sketch and InVision – Digital prototyping tools. It helps us as a team, very quickly validate early hypothesis, get Buy-in and understanding of key stake-holders, communicate the target experience to engineering and development teams.

**Adam Amos,** Senior Client
& Project Manager at *Method*
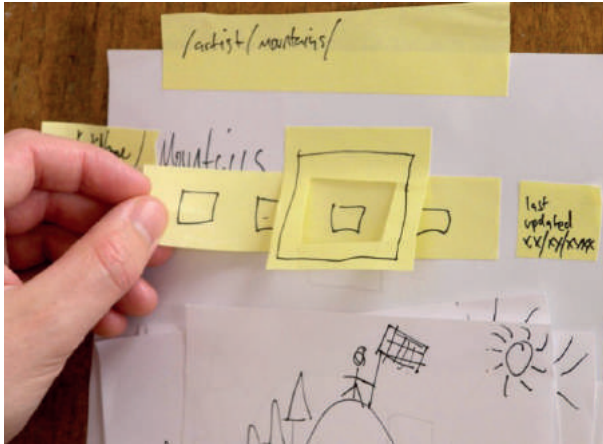


### What are you great at?

I believe my strength is that I understand how valuable design is, how best to apply it and how business can leverage it. I guess that culminates in the ability to think big, understand and consider the macro dynamics in play and steer teams/clients in the right direction, whilst at the same time keeping an eye on the detail of the solution and the craft of design.

### What do you wish you were great at?

I can be impatient at times so I wish I had great patience. It positive it would help me become an even better communicator which I'm sure would make me a better designer/thinker/human.

Also, I wish I was great at playing the harmonica. It's awesome and I'm trying to learn Blues.

### What is a Product Designer in the 21st Century?

It's someone who has the honour of helping our world be a better place, to help build solutions to the smallest and the largest challenges.It's someone who is capable of understanding true human need and behaviors, sociocultural shifts, the emergence of new technologies and has the ability to see how combinations of these can be harmonised to make a difference to the everyday life of people across the world.

### What's your advice for future Product Design students?

•(1) Listen to people, (2) Watch people, (3) Ask questions.
Repeat steps 1,2,3 until you truly understand why you are doing what you are doing.

• Make stuff. Of any fidelity. You will learn so much and it will help with the above.

• It's ok to fail, it's a part of learning and helps steer you to solutions.

• Don't feel like you have to specialise. That's what machines are for !

### Who are *Method*?

Method is a Global Strategic Design consultancy.

"We create value and impact through the design of meaningful brands, digital products, and service experiences. We enable organisations to facilitate change  and drive growth using design, thinking and making."

"Our approach is flexible  and based on rapid design iterations driven by insights, prototyping, and continuous validation.

### What are the big, looming challenges for designers …for society?

There are huge macro-economic and socio-cultural shifts occurring and these will continue at pace over the coming decade, creating challenges for Governments and businesses across the

world. These governments and businesses are beginning to understand that they need to evolve to both protect the people they value and themselves as institutions, which is a great start but but i think the challenge for designers is to help them understand why they need to change and in what way, to become human centric in their thinking so that the changes that are made affect the policies, products and services a way that can truly make a difference to people in their every day lives.

Buzz word technologies such as AI and Blockchain are both a risk and an opportunity dependent on the way they are applied. They have the potential to create bigger economic and sociocultural divides potentially replacing human jobs and making the rich richer which could only exacerbate the issues in hand. But they could also be leveraged to improve lives, they could be scaled to manage a global universal basic income through the rise of national e-currencies and distributed ledgers and provide secure cross boarder ID systems to aid migration and distributed

societies. We as designers can and should join this conversation, understand the why's and affect the how's.

**Who are the first 5 names on your fantasy exhibition Private View invite list?**

1. *Peter Thiel* – He is a highly successful business man defining sectors and I enjoy his provocative nature.

2. *Don Norman* – A true inspiration and thinker from the design world. Has shifted his views in nearly every book he's written, which is a testament to how design evolves and adapts to the context.

3. *Elon Musk* – Lets be honest, he's nuts and a brilliant visionary who is hell bent on pushing what our world can achieve.

4. *Sir Winston Churchill* – "If I had more time I would have written you a shorter letter".

5. *My Grandad* – He was a wonderful man, an engineer, who's life experiences and clinical humour shape my approach to life today.

Follow Adam on Twitter
*@adamamosdesignr*

> **1.** Listen to people, **2.** Watch people, **3.** Ask questions. Repeat steps 1,2,3 until you truly understand why you are doing what you are doing.
>
> Make stuff. Of any fidelity. You will learn so much and it will help with the above.
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> It's ok to fail, it's a part of learning and helps steer you to solutions.

# Product Design graduate wins Institute of Making's cutlery competition

**Wataru Kobayashi's** BUGBUG awarded top prize in competition to design and make new tool for eating // 11 November 2016



Wataru's BUGBUG is a set of stainless steel picnic cutlery designed for the consumption of insects; including chopsticks for eating insects and dish plates for serving.

"The concept behind BUGBUG is to provide an alternative solution to the impending food crisis," said Wataru, who is originally from Japan.

"I wanted to change the perception of people eating bugs – I thought about the existence of tools for eating snails and crabs and realised if these hadn't existed then people wouldn't have experienced eating them."

The judging panel, made up of Dr Zoe Laughlin from the Institute of Making, a representative of the Cutlers' Company, a top chef and a cutlery manufacturing expert, were "transfixed" and "in wonder" when viewing BUGBUG for the first time.

"The thought that had gone into it, the depth of craftsmanship and conceptualisation, the humour - this is the most extraordinary thing we had seen and we wanted to celebrate that," they said in a joint statement.

BUGBUG was part of Wataru's final year project; a product which he says was made possible with the support he received from his tutors and other product design staff.

> My tutors gave me the confidence to enter the competition and Rachel, a wonderful metal works technician, helped me choose the right materials for the product.

The Institute of Making, a cross-disciplinary research club, has crowned BA Product Design graduate Wataru Kobayashi the winner of their Cutlery Design Challenge.

Inspired by the art, craft and science of how we eat, the competition asked participants to design and prototype a new implement, tool or device for eating.

#MDXPD2: Industrial Design

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# AIR
## 360° adjustable airflow Peltier desk fan for the co-working environment

**AIR** is a 360° adjustable airflow Peltier desk fan designed for the co-working environment. It is the most advanced & yet astoundingly simple desk fan. With **AIR**, you can cool down the air in your working environment to suit you and your co-worker's needs. It can deliver a soft or strong cool breeze. It's completely adjustable and best of all, AIR's airflow has 360° angle, meaning that everyone around it will benefit from **AIR**. **AIR** was designed with the working environment in mind, where people get together and work as a team, around a table. **AIR** will enhance the creativity levels in your co-working environment, by keeping the temperature just right, and due to 360° airflow technology, everyone will be benefit from the smooth, cool breeze of **AIR**. AIR's unique selling point is it's uncanny ability to deliver a fresh cool breeze of air at 360° angle.

**AIR** is the only desk fan you will ever need.

**PRODUCT DESIGN**
**Middlesex University**
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#MDXPD2: Industrial Design

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# Swishhh

## A manual blender for children that is rolled to process real food

**Swishhh** is a hand operated blender for children that allows them to be involved in food preparation process; processing food in a mesmerising & playful manner, with adult supervision when handling the blades, the blender can be closed & given to the child to roll on surfaces until the food is processed & they could enjoy a rewarding treat. The purpose of the blender is for children to transition from playing with fake food to making real food. Children can use this blender to process a variety of food. The blender creates a new activity for parents & children to be connected in one activity, increases creativity in making food & teaches them about healthy eating.

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# TA-DA!
## Design framework implementing theatrical metaphors in everyday products

**TA-DA!** Is a design framework used to improve the user's interaction and bond with everyday products, combining joyful theatrical qualities with functional narratives.

To represent the concept, three products were re-designed (kettle, umbrella and toaster) with essential theatrical elements (sound, light and movement).

• **Kettle + Sound:** mimics musical instrument, a steam powered kettle that when boiling rings a bell.
• **Umbrella +Light:** exploring the spotlight effect, with different mode settings not only provides road safety but also gives a positive theatrical experience.
• **Toaster + Movement:** a transparent toaster that spins around flashed by the heating red light.

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# JOY
## Changing Perceptions with Sexual Domestic Products

**JOY** is a political statement that the subject of sex should be seen and not hidden, normalising sexual activities for the future societies. Sexual topics and personal sex stimulation have been considered taboo. Whilst many women are apparently having an uninspired sex life, the UK sex toys industry has the potential to enable women to have fulfilling sex lives. However many of them seems to have a moral objection to their use of sex toys. **JOY** is a design revolution towards breaking taboos by transforming sex toys into everyday domestic sexual objects.

# A Conceptual Model: The Dimensions of Constructed Narratives In Designed Artefacts

Staff in the School of Science & Technology are actively involved in professional practice and research. Here is a summary of the recently completed MSc [Res] by Associate Lecturer in Product Design, **Ahmed M Patel**
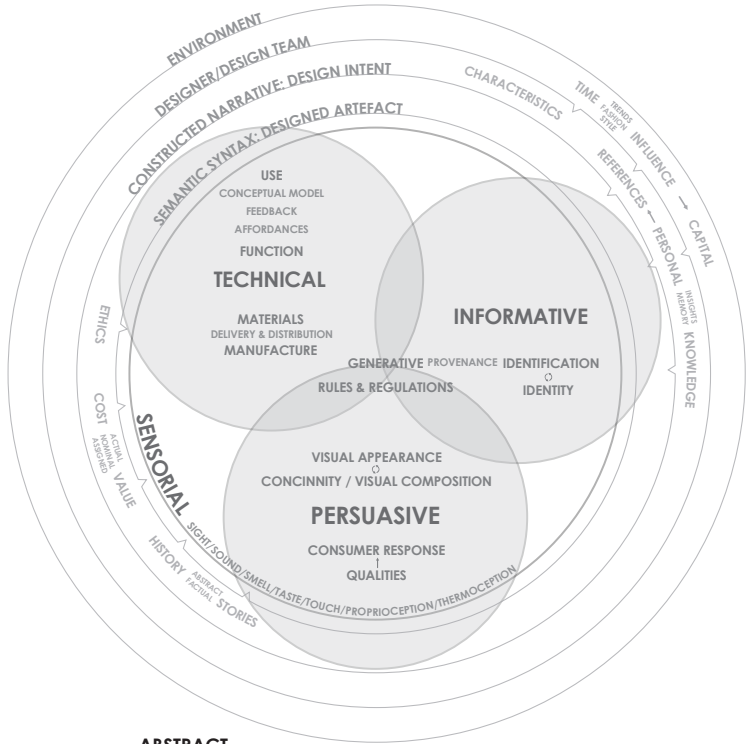


*Often behind things and their functions stand astonishing principles that challenges one to think and question.*
*Clivio et al., 2009*

### ABSTRACT

This research presents a conceptual model representing the dimensions of constructed narrative in designed artefacts. A qualitative approach was undertaken to investigate the heterogeneous meanings, references and stories intentionally assigned to a design and communicated by the artefact. This qualitative approach involved the critical analysis of published literature via a methodology rooted in grounded theory and operationalised through textual analysis and diagramming.

In the examination of multiple perspectives, data triangulation facilitated the corroboration of concurring theories and informed the subsequent synthesis of the conceptual model. The systematic process of diagramming directed the

development of the model, conceptualising and delineating the dimensions *(specifiable aspects, attributes, features, properties & qualities)* of constructed narrative assigned to designed artefacts, and in turn representing design intent and the extended context within which these notions are situated.

## CONTEXT
Design is everywhere. It is a process, or way of thinking, applicable at any scale. It permeates every facet of our lives from the mundane and meek, to the meaningful, monumental and magnificent.

Everything is designed in one way or another. It can help define who we are or provide knowledge and understanding about the lives of others. It can communicate how we feel about ourselves or offer empathy and insights into different cultures. Within the context of Product & Industrial Design, design becomes a process used to create things that can be beautiful, meaningful, novel and different. Design can offer an element of surprise or joy and make one question why that had never existed before. It can offer market penetration and differentiation amongst competition. Design can address problems, fulfil a need; change the world and the lives of people. Designed artefacts have a profound effect upon the way in which they are perceived. They stimulate a visceral, cognitive and emotional response; encourages consumption and presents references and cues towards thinking, questioning

and understanding the item, its operation, function, manufacture, materiality and extended context, be it immediately recognisable and lucid or more subtle and enigmatic.

One of the roles of a designer, within the design process, is to produce, represent, order, express and embed meaning. As a designer, the consideration, creation and communication of meaning, affordances, stories and narratives are inherent to the profession, directing a design process towards the manifestation of meaningful products, services, systems and experiences.

Whilst designed artefacts shape the fabric of our surroundings, a developed understanding and knowledge of narratives is pertinent. It enables one to communicate, inform, interact, initiate user experiences, and facilitate the gaining of former and contemporary knowledge. It can become a tool to entertain, enhance interactions, stimulate responses, teach and learn.

In moving towards an understanding of the disparate dimensions of meanings and narratives assigned to artefacts by designers, established and emerging design principles within the field of product semantics, semiotics and human factors were explored. Consequently, the work collocates a corpus of fragmented literature on product narrative, and presents this salient subject through the synthesis of a conceptual model.

## CONCEPTUAL MODEL
The conceptual model stems from a synthesis of this study, representing the dimensions of constructed narrative assigned to designed artefacts, and in turn design intent and the extended context within which these notions are situated. The dimensions of constructed narrative presented in the conceptual model sit nested within four contextual frames. These dimensions become the *semantic syntax* and rules that guide the constructed narrative assigned to designed artefacts. The design intent is governed by the designer/design team; which in turn is influenced and shaped by the context of design, broader environmental influences.

The dimensions of constructed narrative, are *the specifiable aspects, attributes, features, properties and qualities of the designed artefacts shaped by design intent*. At top-level, these are principally four, *Technical, Informative, Persuasive, Sensorial*; defining and categorising the dimensional clusters grouped within them. The second-level stipulates primary specifiable aspects within the four principal dimensions and lists the dimensions associated to them; i.e. Use, Function, Materials and Manufacture are identified as specified aspects within the principal dimension, Technical. Here, relationships between connected dimensions are maintained; and shared aspects, features, properties and qualities are distributed between the dimensional families; i.e. Materials and Manufacture are grouped, and Delivery & Distribution with shared attributes is centred appositely to span both dimension sets.

# THRILL-ENGINEERING: A PLAYFUL DIALOGUE

**Prof. Brendan Walker** tells us about the V-Armchair and thrilling experiences
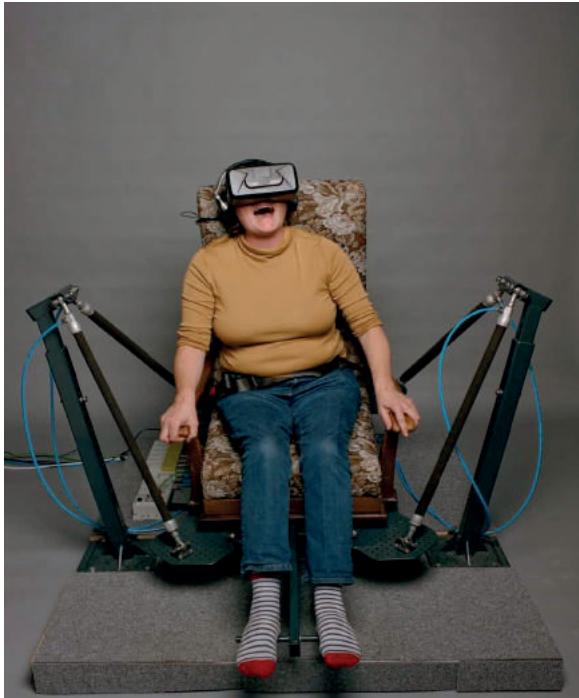


> The addition of a comfortable, high-backed, floral-upholstered chair, sitting atop a highly technological pneumatic machine appealed to me: a playful dialogue between the old and the new in so many ways.

**Professor Brendan Walker, Professor of Creative Industries at Middlesex University, runs 'Aerial' design practice, and is also Senior Research Fellow at the University of Nottingham, and a Channel 4 presenter.**

Brendan originally trained as an aeronautical engineer at Imperial College, London and worked for British Aerospace Military Aircraft for five years before undertaking an MA in Industrial Design Engineering at the Royal College of Art, London. For eight years Brendan combined his professional practice with working in the research studio of the Interaction Design Department at the RCA. In that time he collaborated on several major international research projects. In recent years he has defined his own design research domain, engineering thrill, which was funded by both the AHRB and the Wellcome Trust. He originally wanted to understand his romance with moving structures, and their potential to thrill him. However, this led him to ask a more fundamental question; *can design effectively elicit an emotional response?* He attempts to answer this question by drawing on his collective interests and training in art, design, science and engineering to explore the phenomenon of thrill.

In developing interactive installations to elicit thrilling experiences earned Professor Brendan the title of the world's-only 'Thrill Engineer'. "Thrill Laboratory evolved from my work backdating to 2003. Historically Thrill Laboratory has worked on a number of research projects involving the development of digital technology in collaboration with universities, designers, artists, engineers, technologists, and cultural historians - indeed anyone who has an interest in the manufacture of 'thrill' and how it appears in our cultural world. I started using virtual reality (VR) in a simple way. I realised that there was something very interesting in the relationship between what the rider was seeing, the motion they were sensing, and their relationship between the real and virtual worlds."

## V-ARMCHAIR

V-Armchair is a collision between several of my pastimes and passions: designing rides, riding rides, watching other people ride rides, watching TV, presenting TV, playing with technology, crossing genres and disciplines. But most of all: thrilling an audience with new ideas and experiences.

*Where did the idea for V-Armchair come from?* I've been working with Middlesex University over the past few years (with the kind support of Festo) to develop Loco – a 6 degree of freedom motion platform. Loco was designed to be so simple, that it could be built as a secondary school project. Loco is the first ingredient for V-Armchair.

The second ingredient comes from my recent explorations into virtual reality. In 2016 I exhibited Oscillate at Sheffield Doc Fest, as part of Site Gallery's VR Arcade group show. I saw Grayson Perry's Dream House and Gabo Arora's Clouds Over Sidra . As an occasional TV broadcaster, these pieces started me thinking about the nature of being a presenter in 360 degree video. I've occasionally presented to camera from the seat of coaster (a sequence I shot for Discover Channel International's Engineering Thrills, has now been seen by over one billion people worldwide).

It's this one-to-one relationship between two riders (me plus my viewer), locked in physical proximity to each other, yet moving through space, that I wanted to explore. And of course, if I could record and play back motion through Loco, synchronised to recorded 360 video, well why the heck not!

*But what ride should I shoot?* I didn't want my viewer to experience an inverting or looping coaster. Motion platforms aren't good at replicating inversions, and too intense for the purposes of this project. I was interested in creating a mixture of intellectual as well as sensual engagement and wanted to produce a form of experiential documentary. And then all my birthdays came at once – well at least two of them. 2016 was the 10th birthday of Thrill Laboratory, and the 20th birthday of Oakwood ThemePark's Megafobia, which is one of the most loved wooden (and I should add, non inverting) roller coasters in the world. I gave Oakwood a call, and they said yes.

I put together a production team: Peter Passmore (360 camera, sound, and editing) and Haong Ha Le (VR replay), both from Middlesex University; and Paul Tennent (motion data) from the University of Nottingham. You can experience the resulting 360 degree experiential documentary on YouTube. Granted, you won't have your own motion platform, but if you can go the extra mile and watch it on a smartphone, slipped inside a google cardboard (this one's a fiver, and you'll find others cheaper) with a pair of headphones, then you'll feel like you're sat right next to me (no spewing please).

I wanted to test our results with an audience who'd never tried virtual reality before, nor ridden a motion platform. I also wanted to reach an audience who might feel too nervous or infirmed to ride a real coaster, but who might be coaxed into trying the project if it was presented… not as a ride simulator, but as "an experiential documentary, presented by TV's Professor Brendan Walker". After a couple of calls to Age UK, I had an audience ready to try for themselves. You can see some in the portraits we took on the day, which capture our riders' expressions during their experience of V-Armchair.

The addition of a comfortable, high-backed, floral-upholstered chair, sitting atop a highly technological pneumatic machine appealed to me: a playful dialogue between the old and the new in so many ways. Carefully chosen from ebay for its appearances, the chair arrived with only one small flaw: it was a commode. Something I chose not to reveal to my sitters at Age UK.

*What now?* The Universities of Middlesex and Nottingham, along with Marianne Markowsky at Greenwich University, are still gathering and analysing our viewer's responses to the experiment. *Me?* Well, I saw riders' responses first hand – engaging and entertaining, even without a motion platform. I'd now like to produce a series of short experiential documentaries. I'm just waiting for the right conversation to happen with the right person.

#MDXPD2: Human Interaction

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# FLY BABY
## Plug & Play: Motion-Controlled Wah Wah for Electric Guitars

**Fly Baby** is a motion-controlled guitar attachment providing Wah Wah effect. Using and accelerometer, this plug-in device allows expressivity never seen before in music performances.

**Fly Baby** modulates the frequency range of the electric guitar foot pedal.

It is designed to remove the requirement and needs of a foot pedal.

It is designed to reinvent your style on stage, making your music follow your movements and body language on stage.

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# AMIGO
**Child's companion facilitating play, cognitive development & healthy routines**

**AMIGO** is a children's toy that helps them with daily tasks as well as educating them. Featuring sound, colour & movement, children can be entertained, taught and stimulated to better cognitive development.

**AMIGO** also offers children's stories, songs and other fun activities.

Let **AMIGO** entertain and watch it move with you. Daily tasks & healthy routines become fun with **AMIGO** presence.

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# Sentinel
## The dual 360° bike camera keeping an eye out

**Sentinel** is a compact bicycle accessory that keeps you safe by capturing video footage and GPS data whilst commuting.

With dual wide-angle lenses offering 360° coverage, record and playback footage that's automatically timestamped via GPS.

Sync your footage with one click to the **Sentinel** app, ensuring key incidents are retained.

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# NODE
**A Wearable System for Analysing Vital Stress Biomarkers; HRV & Voice Microtremors**

**Node,** allows users to mediate their biomarkers by providing live on-screen visualisations, a neccessasity for jobs that require high psychological demands. **Node** enables a new interaction with information, it means you can seamlessly view vital signs whilst working. Stress patterns are incredibly sensitive to the state of mind. It analyses two vital biomarkers, HRV(Heart rate variability) & Microtremors in voice, during each activity cycle to assess levels of anxiety, providing constant real-time feedback to aid users in modifying this behaviour. By conducting voice analysis and monitoring a non-invasive biomarker such as HRV, helps give an insight into a users day, & allowing us to classify moments of stress over a period of time, we can help users cultivate a more mindful attituded towards their bodies, and modify behaviour as result.

# VR PLAYGROUND

'Thrill Engineer' **Prof. Brendan Walker** tells us about his work with **Horizon** on developing interactive experiences for entertainment
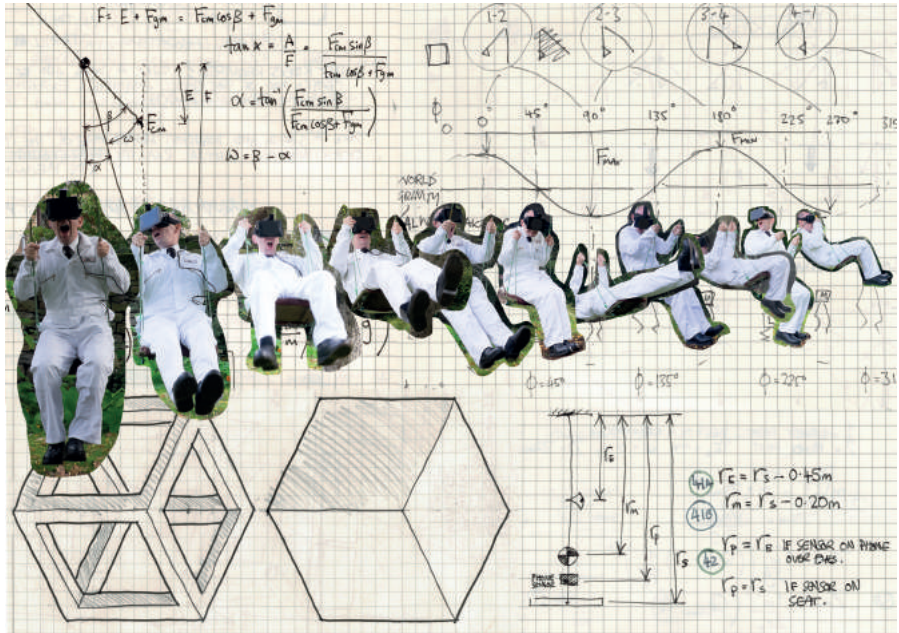


> Entertainment and the creative industries are one of Britain's greatest exports.

My interest in developing interactive installations to elicit increasingly thrilling experiences has earned me the title of the world's-only 'Thrill Engineer'. I also run my own design practice *Aerial*, consulting on rides and entertainment TV shows, which often involves physiological monitoring of participants and design of dynamic data graphics for factual entertainment. Much of the work of *Thrill Laboratory* (which is a product of Aerial) has been monitoring people's physiology to help them understand their emotional responses to different types of thrill-related entertainment. Another facet has been to create new experiences, and I

started using virtual reality (VR) in a simple way. I realised that there was something very interesting in the relationship between what the rider was seeing, the motion they were sensing, and their relationship between the real and virtual worlds. to cater to people who are already engaged with science, and an audience that tends to be 'non-diverse'. So we thought why not bring a festival to the young people of Lewisham?

We used a participatory design approach, and went out and actually spoke to young people about what they wanted before planning. They said they wanted zombies, aliens, UFOs,

and a talent contest, so that's what we're doing. You can find science in any subject.

Middlesex University hosted a series of open talks leading up to the event, exploring the real science behind asteroids, their materials and space missions. Wyn Griffiths, Product Design Course Leader at Middlesex University, said: "We pride ourselves on the diversity of our student body. However, this is an ongoing battle, as overall diversity in science, technology, engineering and maths subjects is poor. That is why we are so excited to be the lead academic partners for SMASHfestUK. Our future is increasingly technological with huge opportunities to mould and guide that future for passionate young people. Getting a balanced mix of lots of young people excited by and involved in SMASHfestUK will be one great way of building a sustainable future for science, technology, engineering, maths, design and the arts, whist having a brilliant time."

## VR PLAYGROUND

Early versions of the *VR Playground* concentrated on the relationship between the rider and their physical experience, using a playground swing and creating a very simple room for the virtual world, replicating the gallery space they were in. Experimenting with this technology allowed me to explore the relationship between the virtual world and the real experienced world, and to start amplifying

aspects of the virtual world, for example how far people felt they were swinging in the room. Dropping away the virtual floor was also very successful to the extent that we were able to make people scream! Exploring these visual, psychological techniques - similar to those used on the Victorian ride called 'The Haunted Swing' - made me realise I was able to replicate what they had managed to do mechanically 100 years ago but using virtual reality. Surely there must be more we could do? Hence the development of the VR Playground.

## AREAS OF EXPLORATION

Interesting areas we are exploring are around motions that currently exist in the real world and looking at ways to add a VR narrative over the top. By doing this we are immersing people in a completely 'other' world, appropriating existing experiences that aren't intended or understood as being thrill rides to start with – for example the playground swing, but also things like lifts and escalators.

The most unique thing is that we are deconstructing the physical experience, and this draws on my original training and career as a military aeronautical engineer at British Aerospace.

Rather than studying the G-Forces exerted on a pilot in a fighter jet, in the VR Playground we're studying the forces exerted on the body and the physical actions of the body during the action of swinging.

Even though it may appear to be just a simple pendulum, these forces can be just as complex as with a pilot albeit a little subtler. We've started to be able to isolate different forces that are felt by the body and use visual and audio techniques to amplify these in the virtual world. For instance, while you may feel like you're on a pendulum swing in the real world you may, in our virtual world, believe you're bouncing up and down on a spring.

The narratives you can create, and the rides themselves, start to become quite fantastical.

## WHAT'S NEXT?

We are now taking the VR Playground on tour. The first year sees the VR Playground attending four UK venues, and in the second year we will be promoted to international festivals looking to source work for 2018. Visitors coming to experience the VR Playground will firstly see a series of sculptural cubes with swinging riders inside.

What are they experiencing? Well, you'll just have to join the queue to find out.

Follow
Prof. Brendan
Walker on Twitter
*@ProfBWalker*

# Eurobot robotics competition comes to Middlesex University

Middlesex Design Engineering and Computer Science students compete with other universities at the Eurobot UK Final // 07 April 2017
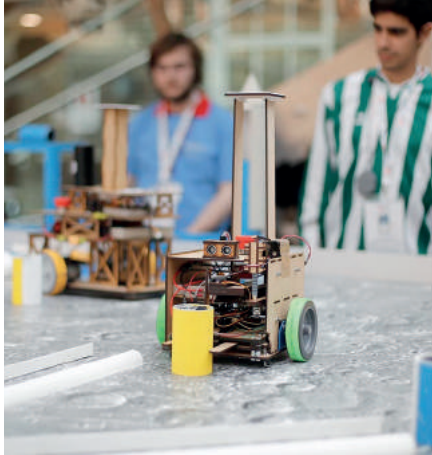


**The UK finals of the Eurobot international amateur robotics contest were held at Middlesex University on 6 April involving 35 teams of young people from across Europe.**

Two teams of Middlesex students from BSc Computer Science and BEng Robotics competed alongside teams including Southampton University, UCL, Imperial College London, Aberdeen University, Dresden University and Birmingham University.

Eurobot primarily aims to foster and develop interest in robotics among young people all over the world. It achieves this by asking students to build and design robots capable of completing set tasks without human control.

This year's theme 'moon village' saw robots competing to pick up lunar modules and different components on a 3 x 2 metre table.

Michael Heeney, Engineering and Computer Science Technical Tutor at Middlesex University, supported the students with building and programming their robots. "The students were doing lots of different types of programming such as Arduino micro controllers, python, and C++," he says.

"Some teams even simulated the table in 3D so they could see how the robot should move in a perfect scenario."

Ajay Parmar, Graduate Academic Assistant at Middlesex University, travelled to Paris for Eurobot referee training. "This was a completely new experience for me as I had never competed in Eurobot before. As the rules are written in French and then translated it is important we make the trip to eliminate grey areas in the scoring and rules," he says.

"When I was there I was impressed to see how commonly used 3D printing is in France and the versatile applications it is used for. Middlesex University hosted the UK round and it was a great experience being involved in the build of the tables and refereeing the competition."

"When I went to the finals in La Roche Sur Yon, I found it very interesting as a Product Designer, to see how different countries use different materials and manufacturing processes. Some stands were exhibiting the latest technological products such as 3D printers that are capable of printing a wood material similar to MDF as well as conductive material that could be used in circuits."

"The tasks demanded were very complex. The robots have to move items to and from specified locations in particular orientations within a time limit of 90 seconds."

"It was incredible to see countries from all over the world interpret the challenge in their own way using an array of technology including pneumatics, lasers, vacuums, programming, 3D printing and much more. Some countries did not bring a robot only the tools to make one. Numerous teams brought their own 3D printers to the event allowing them to test, develop and fine-tune their robots on the French tables."

In total, 1000 students and 200 teams participated in the Eurobot competition this year from 15 different European countries.

Read more about Eurobot at *eurobot.org* & re-watch the final at *www.eurobot.mdx.ac.uk*

# #mdxpd 60 seconds

An Interview with **Sarah Aliya Shaukat,** 2nd Year Erasmus+ Exchange Student



**You are?**

My name is Sarah Shaukat, I'm an exchange student from University Sains Malaysia, Penang, Malaysia. I have taken part in the Erasmus+ Mobility Exchange program in Middlesex University for the duration of 8 months. I am currently a second year BA Product Design student.

**Why Product Design?**

I enjoy the sense of exploration and product design is one of the courses that enables me to create things. It's never boring to take part in projects, I believe the more we take part in different projects the more we grow and understand how things miraculously work.

The sense of security I have when I'm allowed to take control of everything I do is basically the fun part. It's amazing how it used to be a hobby to create things, and it is now my dream job. When people ask me "Why would you take a course that you barely have enough sleep?", I laugh and say, "I enjoy the sleepless night exploring." Knowledge is never enough and product design helps me to improve my knowledge base. However, I never solely rely on text books.

**What's a standard day like for you as a Designer?**

My ideal day is to do lots of research, find out the things in detail and brainstorm various ideas. On other days, is mainly about self-exploration, looking at how things work and exploring material possibilities.

**What's your favourite design tool?** Photoshop, Illustrator and Solidworks.

**What are you great at?**

Illustrating and layout design.

**What do you wish you were great at?**

The ability to convey and communicate messages of my ideations to people.

**What is a Product Designer in the 21st Century?**

A Product Designer is more than one who just designs things and makes things look pretty. It is about innovation, development, communicating messages and designing with empathy for the people.

**What's your advice for future Product Design students?**

Learn new things every day, and challenge yourself to explore every possibility. Find out more about new programmes and self-learn it. Develop your sketching skills, the most important aspect as a designer is to practice sketching towards conveying messages to your client. Have fun on what you do, don't just give up when you're stuck. Do your best at the things you do and believe in yourself. Be confident about the project you do.

**What are the big, looming challenges for designers...for society?**

The high expectations and the everchanging technological advancements. It is a big challenge to keep up with time, staying put and stagnant without developing is also perhaps a big challenge for the designers. Designers should think of the ways to develop into something worthy for the people.

**Who are the first 5 names on your fantasy exhibition Private View invite list?**

It hard to specify the names but I'll ensure my parents will the first ones in my private view invite list.

Thank You!

**Follow Sarah Shaukat on Instagram @liyasarah_99tc**

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# TRIO

## A Material Exploration to Obtain a Unidirectional Fold for Fashion Accessories

**TRIO** is a material exploration combining additive manufacturing with textiles. **TRIO** uses a template to create a unidirectional fold to have an outcome of a fashion accessory. The unidirectional fold is achieved by determining a gap between to flat parts. Once these parts are folded they cannot go beyond a certain point if they are folded in the opposite direction they will not hold. **TRIO** is unique and personal to the user as a low poly mesh pattern is generated from the users choice of image this is then combined with the template. Once the template and the pattern is combined it is 3D printed onto tulle. The print manipulates the fabric and it can then be translated into fashion accessories.

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How are you do-ing?
do - re - mi - fa -Sol

# speak
## overcoming stammering by following the rhythm of the music

**speak**, a musical brooch & necklace jewellery devices with bone conduction earphones that aims to help improve stammering by enabling the user to speak to the rhythm of music or sound.

Users can use a beat for a word or syllable, simultaneously the LED light synchronises with the rhythm of the music to show the user's speaking rate.

The device also vibrates to stimulate the chest and lung to help with breathing and allowing the words to flow fluently.

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# Zen
## Acupressure on the go!

**Zen** is a stylish and practical way of using acupressure on the go. You can choose from a range of designs; scarfs, corsets, headbands and socks. Everyone can use it anywhere. The spikes stimulate the skin and produce endorphins, which help release pain and stress.

**PRODUCT DESIGN**
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# Skin
## A Jacket Designed For The Changeability Of The Urban Environment

**Skin** is a fashion jacket which displays the effects of homeostasis when the user is affected by the changeability of their environment. Urban individuals are active and are faced with constant changing environments. **Skin** is a fashion statement which combines homeostasis to adapt to different urban environments.

**Skin** senses a rise or fall in temperature of the user. When the temperature rises Skin deflate the jacket. When the temperature falls, the jacket inflates to keep the user warm. **Skin** creates a protective relationship with the user.

# Silver medals at the WorldSkills UK National Competition Finals

Success for a duo of MDX student teams // 19 November 2016



> Once again our students demonstrated a great degree of skill to complete the challenges and the experience develops useful skills which are transferable to employment in this area.

**A duo of talented teams from Middlesex University London scooped silver medals in the WorldSkills UK National Competition Finals which culminated at NEC B'ham on 19 November.**

The students achieved successes in the robotics and mechatronics categories of the competition which ran from 17 – 19 November as part of The Skills Show which is the UK's largest technical skills and careers event.

Middlesex students Andrej Lieskovsky and Piotr Nowicki secured silver in the mechatronics (higher) category whilst Eva Blessing Onyeulo and Rahul Vekaria, who both hail from Hendon, claimed silver in the robotics category.

Middlesex University London mechatronics student Andrej Lieskovsky who is from Nitra in Slovakia said: "It was a good challenge to test how prepared I am for working in real industry."

"It's a great experience to be able to compete with the UK's top mechatronics teams in a national competition and I hope that potential future employers will look at it the same way."

The robotic teams had to programme their robots to complete a series of tasks including navigating through a maze. Meanwhile in the mechatronics competition students had to build a modular production system, integrate this with two other systems and optimise its system efficiency.

The WorldSkills UK National Competition Finals featured 58 skills ranging from forensic science to engineering.

Middlesex University London's Professor Mehmet Karamanoglu said: "We are always very proud to see Middlesex students involved in these competitions where they get to put their skills against some of the best in the industry."

"I congratulate all medallists and everyone who took part in these high level trial. Once again our students demonstrated a great degree of skill to complete the challenges and the experience develops useful skills which are transferable to employment in this area.

# Design Engineering students dominate at iMechE Design Challenge

**Middlesex team win first year regional final of iMechE's 2017 Design Challenge. In second year competition Middlesex teams take second and third place //** 06 April 2017



**A team of first year design engineering students from Middlesex University have won first place in the Greater London regional final of the Institute of Mechanical Engineering's 2017 Design Challenge.**

The winning students are Joshua Mitchell and Joana Da Cunha Miranda – both studying BEng Robotics – and BEng Mechatronics student Daniel Newton.

After a nail-biting final, the Middlesex first year team were able to secure a resounding victory and walk away with the £500 cash prize. This is the third year in a row that Middlesex University have won this regional final.

Joana credits the problem-solving and team-building skills she has gained on her course – along with lots of hard work – for the team's success. "We had to build a robot that could drive forward until it touched a wall, then drove back to hit a target – the robots that came closest to hitting the target won the most points," she says.

"We spent 80 hours working on the project so it's very rewarding to have won such a massive competition. I love my course because it's so much about real life."

In the second year competition two Middlesex teams came close to becoming champions. Aron Haralddson, Sahil Sharma

and Adit Gurdatta finished in second place, while Chibuike Okpaluba and Vishal Varghese took third.

Mehmet Karamanoglu, Head of Design Engineering and Maths at Middlesex, is very proud of the Middlesex teams. "I am absolutely delighted with this year's results. It's a real boost to the end of the year for our hard-working students.

"The iMechE Design Challenge requires the application of engineering principles in a fun and engaging way that develops and motivates the students.This approach has been in place in our programmes for two decades and we see the positive impact of this very clearly."

# MIDDLESEX GRADUATE IN FORBES AFRICA 30 UNDER 30 LIST

**Nasir Yammama -** Founder, Verdant Agri-Tech

The Queen's Young Leaders Awards recognise and celebrate exceptional young people aged 18 to 29 in the Commonwealth who are driving change within their communities and transforming people's lives.

*Nasir Yammama* from Abuja has been acknowledged for harnessing the power of simple, low-cost technologies to help local farmers produce more crops and increase their sales.

**COUNTRY: Nigeria**

It all began in 1996 in the village of Yammama. On a clear day here, a blue sky covers the heavens and white cotton fields light the ground below. A dozen brightly-painted trucks are lined up; workers load sacks upon sacks of cotton. Then six-year-old Yammama, who carries the name of his village, walks the fields with his father. He saw the workers sweating and vowed to improve the work of farmers in Africa.

In 2014, he founded *Verdant AgriTech*, a social enterprise to support rural farmers with mobile technologies for sustainable farming and improved food production.

"The company was founded on the premise that smallholders should be able to produce more, sell more, make more profit and thereby attain an improved standard of living by using simple technologies," he says.

Yammama began with 50 farmers in Katsina, his home state. He taught them to use their basic phones to gather market information, weather and management skills, and financial services.

Yammama has achieved a lot. He studied information technology and business information systems at Middlesex University, London, has a master's in creative technology, was selected among 50 Global Entrepreneurs for the MIT Global Entrepreneurship Bootcamp and won numerous awards, including the British Council and Virgin Atlantic's Enterprise Challenge in 2015. This gave him the chance to be mentored by Sir Richard Branson and receive a start-up grant for Verdant.

In collaboration with Oxfam and GIZ, Verdant is currently running a project to support 25,000 farmers. This June, Yammama will also receive the Queen's Young Leaders Award in England.

Yammama has profited from linking technology to Africa's rich red soil.

# DIGITAL ARTS TAKE CENTRE STAGE

www.theguardian.com/education/2017/
jan/20/digital-arts-take-centre-stage

A demand for creative digital artists & the **Creative Technology MA/MSc** course at Middlesex University



> Creative digital artists are in demand for everything from Shakespeare plays to VR apps – and universities are keen to provide them

Read about the
***Creative Technology
MA/MSc*** Course at
Middlesex University
***www.mdx.ac.uk/courses/
postgraduate/
creative-technology***

In the 17th century, audiences of Shakespeare's The Tempest were thrilled by the sound of cannon balls rolled on wood to suggest thunder. Four centuries on, in the Royal Shakespeare Company's latest production of the play, actors control on-stage digital avatars via cutting-edge motion sensors.

It's a measure of how widespread the deployment of digital arts skills has become. To feed the demand, universities are increasingly catering for the technological aspects of the creative industries with a range of master's programmes covering film, animation, product design, marketing and more.

"There are more jobs than there are digital creatives with the right skills," says former music producer Gigi Piscitelli. During his master's in creative technology at Middlesex University London, he won funding to create an app that offers live music performances in 3D sound and 360-degree video, suitable for the immersive environment of virtual reality (VR). He's learned to code, build an app and understand applications of VR. "I'm not an expert," he says, "but you at least need to know what's possible with technology before you set about creating something."

Despite being highly practical, the master's at Middlesex recruits from a range of professions, including marketing and music. "Humanities students are welcome," says Dr Magnus Moar, senior lecturer in digital arts technologies. "I let them know what they're in for technically at interview."

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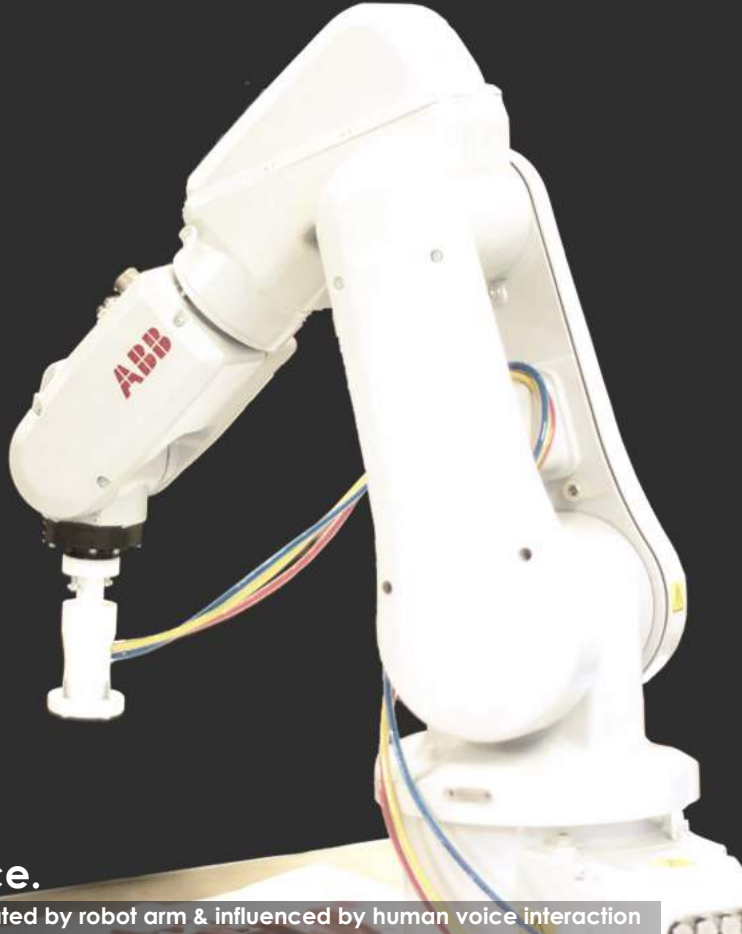
# Paint My Voice.

**Abstract paintings, created by robot arm & influenced by human voice interaction**

This project is a human-machine collaboration, created to break boundaries between man and machine, while also creating artistic masterpieces. It is a performance between a brave member of the audience and the robot. The robot paints an abstract painting in the style of Jackson Pollock, however depending on the notes and the volume of the singer, the robot changes its movement. The human does not control the robot, but rather adapts the way that the robot moves. This project brings about an environment where both the human and the robot are working together in partnership in the same physical space, taking the skills of the robot and merging it with the creativity of a human, with the painting as a result of this interaction.

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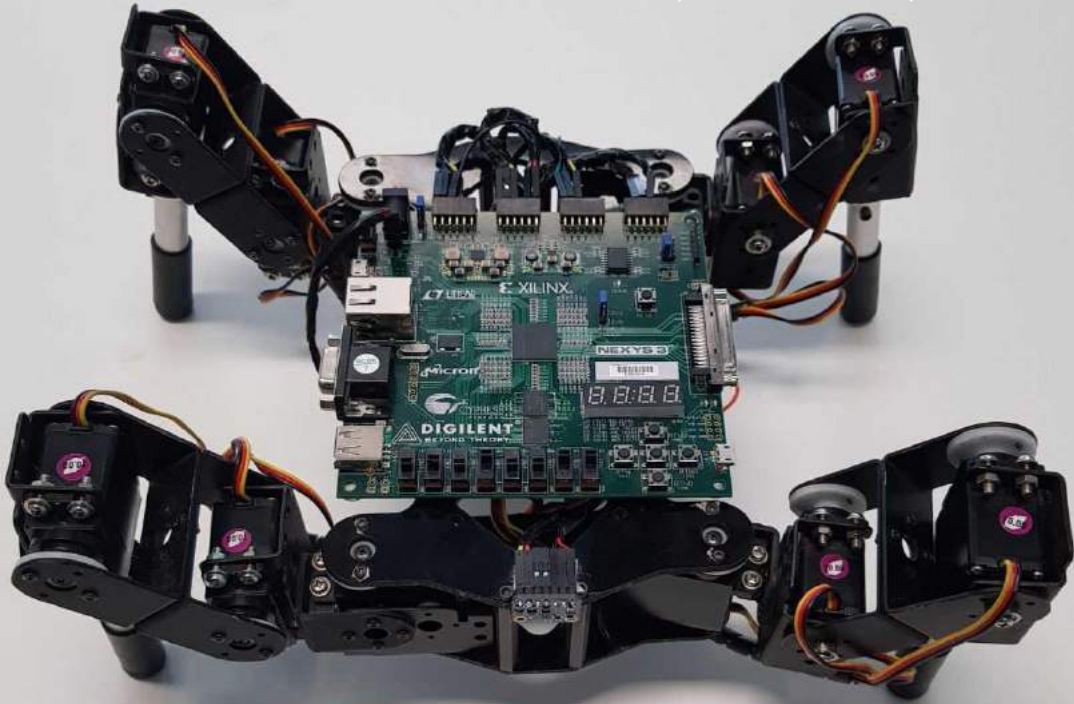
# Nexys-motion
## Lynxmotion robot, performing gaits based on quadruped animals

By studying how animals locomote, the patterns between each leg's active and inactive state can be represented in a rhythmic digitalised set of known states. This can be modelled using robots as a means of imitating animal movements. By manipulating each legs phase delay, any gait (style of locomotion) can be implemented. By making use of the parallelism of an Field Programmable Gate Array (FPGA), the objective to perform multiple gaits can be split into easier sequential tasks. This goes from mapping the movement of each leg individually to controlling all four legs, by a means of bit-manipulation.

# 360° Smartphone Camera Rig

**Kane Fernandes,** 2nd Year BSc Product Design student, speaks about his Bullet-Time Effect camera-rig project & the benefits of sharing via Social Media



> Using Instagram, Facebook, Twitter & YouTube has allowed me to share my work with friends, family, industry and the public. Furthermore, it has encouraged me to tweak and continue working on projects post submissions and deadlines. I would absolutely recommend sharing work online to fellow design students to gain feedback and support on both 'live' and completed projects.

As part of the BSc Product Design cohort, we initially learned about advanced physical prototyping concepts using the Arduino Uno with a range of components that included servos, buzzers alongside Processing – a visual digital programming language IDE. This allowed us to build on what we had learned in the first half of the year, together with the BA Product Design students.

We were then set the brief for our personal projects which was: *To develop a new user experience for smartphone camera users. The system should enable users to shoot amazing video that has either not previously been possible or that can only be done with expensive professional systems.*

My solution to this brief presents a 360° rotating arm, which anyone can attach their smartphone/camera to and record video/photos around themselves whilst standing on a central platform.

This allows the user to recreate a Bullet-Time Effect video or regular video as well, including circular scenery shots and more.

After doing some initial research into a range of different camera setups used within the Film & Television industry, I found myself interested in the Bullet Time Effect, a visual technique made famous by the Matrix films but also used more recently in BBC's Sherlock. The setup they used involved several high-end, expensive

cameras lined up in a row around a central subject all set to take a photo at the same time but from different angles to produce a stunning effect.

My aim was to recreate that effect, but on a budget and only using one camera. Furthermore I aimed to focus on the most widely available and commonly used camera today, which is the Smartphone camera. This would allow it to be more accessible to amateur film makers and students.

Having initially experimented with different ways of achieving the desired effect, an initial concept was to have a device which could hang from a suspended pivot point (e.g. a ceiling or tree) and spin around the subjec who would be standing below. However, it was quickly identified that this could pose a risk to the user and also limit the areas where it could be used.

I tried out potential technologies which I could implement in order to get the high speed required to shoot the bullet time effect as well as other 360° surround video. This lead me to drones, more specifically their efficient, high speed brushless motors and batteries.

A main objective was to make a device that wouldn't require a heavily constrained specific environment in order to work and came up with the idea of a pivot point, which the user would stand on and have the camera swing around below them on a rigid fixed distance arm.

Wanting to prove my concept, central to the course philosophy,

I made an initial prototype using readily available materials including an old bicycle wheel and a plastic platform. I roughly attached the Arduino and all the other tech including the motor with a soft propeller. This prototype proved that I could achieve the desired effect as you can see in the first part of my project video on YouTube.

To form the final prototype, I found a discarded metal office chair base which worked well as a stable platform for the user to stand on. I had to create a rotating arm using the metal lathe and other machinery in the MDX 3D Workshops to fit the neck of the chair and in order to attach the brushless drone motor. It also required circuitry to allow it to spin around 360° at a high speed. The smartphone was then attached using a monopod, ie. a Selfie-Stick which allowed myself to quickly adjust the frame to suit the height of the user.

Making the system remote controlled [RC] meant it could be operated from a safe distance with the use of XBEE - wireless connectivity modules which work well with Arduino technology. RC also meant that the operator wouldn't be in the background of the scene given the range of the XBEEs. After adding a custom grip platform for the user to stand on, I tried it out for the first time inside the brand new MDXPD studio with a group of fellow students, with one volunteering to stand in the centre of the rig. You can see this clip at the end of my project video, where I experimented with standard 360° rotating video as well as frame by frame animation in the style of the Bullet-Time Effect.

I also experimented in different locations, with other users, and with a range of post-production effects, which can also be seen on my YouTube Channel.

I now hope to develop the rig further with another prototype to potentially hold more than one person or even a group that could potentially be hired out for events, functions and filming productions.

Since completing the project, I have been featured by Arduino, XBEE, Hackster.io & Adafruit on their websites & social media platforms. It has been great getting feedback from the public through social media as it allows me to build on my existing ideas and also get suggestions for new ones.

From the first year, I have enjoyed developing my portfolio of work on Social media alongside using #MDXPD to add to the work of peers. I post updates and work in progress as well as the final prototypes of product/service ideas in order to share the design process and not only the final outcome.

Using Instagram, Facebook, Twitter & YouTube has allowed me to share my work with friends, family, industry and the public. Furthermore, it has encouraged me to tweak and continue working on projects post submissions and deadlines. In addition to this, I have been able to develop my video/photo editing skills and public engagement. I would absolutely recommend sharing work online to fellow design students to gain feedback and support on both 'live' and completed projects.

# #mdxpd FEATURED TUTOR

**Prof. Patrick W Jordan,** Professor of Design Psychology at Middlesex University



*Patrick's approach is based on the latest scientifically validated findings from psychology and the social sciences. He uses tools and techniques that give unique insights into customers' practical and emotional needs, enabling his clients to work effectively to develop successful products, services and marketing campaigns.*

**For more information and links to lectures visit patrickwjordan.com**

**Patrick W. Jordan is Professor of Design Psychology at Middlesex University and teaches Strategic Design on our Product Design & Product Design Engineering courses. He is recognised as a world-renowned expert in the area of design and business psychology. He is a strategic advisor to many of the world's leading companies as well as to the UK and US Governments.**

Patrick's focus is on helping designers, companies and organisations to perform at their best and to meet their customers' needs in an effective, innovative and engaging way. He does this through enabling companies and organisations to understand their customers attitudes and behaviours and to meet their needs. He also helps them to maximise their productivity, innovativeness and employee satisfaction.

Patrick's approach is based on the latest scientifically validated findings from psychology and the social

sciences. He uses tools and techniques that give unique insights into customers' practical and emotional needs, enabling his clients to work effectively to develop successful products, services and marketing campaigns.

He is the author of the influential book 'Designing Pleasurable Products' and the 'Four Pleasures' model applied to design, and has been advisor to many of the world's leading companies including: Starbucks, Microsoft, Samsung, Gillette, Shell Oil, P&G, Unilever, Siemens, Philips Electronics, Sunbeam, Nokia, Ferrari, Renault, Nissan, HSBC, Lloyds, Royal Bank of Scotland, NatWest, Direct Line, Churchill, Motability, Traidcraft, Goodwood, Autoglass, Arriva Trains, Ardaugh Glass, Heye International, Mars Confectionary, Pringles, Capita and American Seating, and policy advisor to UK government in a variety of areas including: business and innovation, education, crime and policing, health, transport, social security.

# SMASHfestUK CRYOVOLCANO WORLD-RECORD ATTEMPT

Middlesex Science and Technology staff & students hosted a cryovolcano official world record attempt at **SMASHfestUK** festival in Deptford // 16th February 2017



SMASHfestUK's award-winning family festival returned to Deptford in London, 13-17 February 2107, with Middlesex University students and staff taking centre stage at the main attraction – a cryovolcano eruption.

The festival, which aims to widen participation in science, technology, engineering and maths (STEM) through the arts and design, included interactive installations, music, film and participatory art themes around super volcanoes.

As lead academic partner of SMASHfestUK, Middlesex University staff and students from product design, design

engineering, maths, computer science and illustration courses designed, built and participated in activities throughout the week, working with the local community, schools and engineers and scientists from 12 partner universities and industry.

Top among those activities was the building and eruption of a five metre high cryovolcano on 16 February. Using liquid nitrogen at -196 degrees to set off the explosion, the cryovolcano erupted to shoot 800 ball pit balls 65 feet above the Albany Theatre Garden in what was a world's highest, and will be a world record once confirmed.

Wyn Griffiths, Course Leader for BA/BSc Product Design and Co-Founder/Director of SMASHfestUK, is confident that the festival will encourage young people from all backgrounds to participate in all things STEM.

"At Middlesex University, we pride ourselves on the diversity of our student body and our innovative approach to public engagement and recruitment," he says.

"However, this is an on-going battle, as overall diversity in science, technology, engineering and maths subjects is poor. Widening participation and working to alleviate imbalance in gender, ethnic and socio-economic diversity is an ethical requirement and urgent mission for higher education.

Universities shouldn't be 'ivory towers', but open, collaborative hubs; active in the heart of their local communities, helping to build science, cultural and social capital. That is why we are so excited to be the founding and lead academic partner of SMASHfestUK."

SMASHfestUK will be popping up across the UK during 2017, and back, aiming for more World Records and creating more amazing activities and experiences in 2018, with **'FLOOD!'**

To view the cryovolcano galleries, visit: **www.flickr.com/ photos/30542236@N04/sets/721 57681405262285**

# SMASHfestUK wins prestigious national award

The STEM through the Arts and Design Festival and Outreach programme, supported by Middlesex University, returns for its third year, bigger and better!





**The NCCPE [National Coordinating Centre for Public Engagement] chose SMASHfestUK as the winner, with the judging panel saying:**

"This team took a concept that lots of people talk about, and turned it on its head. They challenged concepts of hard to reach, and worked with young people to create a festival everyone wanted to be part of. Disaster led, this project was far from it. This is a truly innovative project… the themes are strong & the ways in which they are interpreted are really clever. It is effective to have a hyper local approach this is narrative based and semi-immersive."

**An innovative festival which uses a virtual natural disaster scenario to reignite the interest of young people in science subjects, has won a prestigious national award.**

SMASHfestUK, a collaboration between the University of Greenwich and Middlesex, is a festival held in Deptford, creating exhibitions, arts events and experiments linked to an impending earth-destroying natural event as its central theme.

The project was awarded top prize in the Science, Technology, Engineering and Mathematics (STEM) category of the National Co-ordinating Centre for Public Engagement's bi-annual Engage Awards. In February, the festival took to

the streets again with the news that an undiscovered super-volcano is about to erupt. Previous themes have included an impending asteroid collision and a massive solar storm.

Wyn Griffiths from the Product Design and Engineering Department co-leads the project and said: 'SMASHfestUK tends to take over life completely because it's such a wonderfully creative way of getting kids interested in science again.

'The problem we face is that most primary schools use project-led learning to engage younger children, but once those children get to secondary school the way learning is delivered changes and many children become disengaged.

**For more detail and information visit: *smashfestuk.com***

**Watch the SMASHfestUK team ENGAGE Award interview:**
***https://www.youtube.com/watch?v=4haWzkJBNU8***



'SMASHfestUK is a great way of reminding them that science is still fun.'

The NCCPE judging panel said "This team took a concept that lots of people talk about, and turned it on its head. They challenged concepts of hard to reach, and worked with young people to create a festival everyone wanted to be part of. Disaster led, this project was far from it."

The project is just one example of a growing trend amongst the UK's researchers – to reach outside the university to really connect their work to wider society and involve the public in research in meaningful and potentially transformative ways.

The three finalists in the STEM category were selected from more than 180 entries and demonstrated a broad range of high quality activities to inspire and involve public audiences.

Other finalists' work ranged from digitally reconstructing city histories to protecting endangered species; from working with older people as researchers to using art workshops to change how we view the public toilet; from young children conducting their own research to influence the United Nations, to using theatre to improve oral health outcomes.

As award winners, the SMASHFestUK team have received £1,500 to go towards further public engagement work, and will be supported by the NCCPE to share their work across the UK.

See the SMASHfestUK photos: **https://www.flickr.com/photos/30542236@N04/collections/72157682754816324/**

**In 2018, there's a FLOOD coming!** Keep an eye on the website for details as they emerge: **smashfestuk.com**

**Follow #smashfestUK on Twitter and Instagram**

# THE RITTERMAN BUILDING
## A New 3,300 Square Meter Building, A Brand-New Studio and The Living Wall





**Dame Janet Ritterman, Chancellor of Middlesex University, officially opened the University's new Ritterman Building to invited staff, students, alumni and partners at a celebratory event on Thursday 2 February.**

The £18 million building, which took just over three years to build, is named after Dame Janet - a distinguished academic and musician with a global reputation for championing the arts.

To celebrate the launch, a number of different workshops were put on by students and staff including life drawing, cyber security, virtual reality, robotics and dance.

The event also included the launch of the UK's first installation of the new Festo Didactic Cyber-Physical Factory, placing Middlesex at the forefront of training future engineers.

"The Ritterman Building means that Middlesex continues to provide our students with a world-class learning environment equipped with the latest facilities and technology," says Professor Tim Blackman, Middlesex University's Vice-Chancellor.

"The spaces encourage students to collaborate and mix, and not just to learn but to put their learning into practice."

The building opens up 3,300 square meters of additional teaching space for the Faculty of Science and Technology and the Faculty of Arts and Creative Industries, with specialist areas including state-of-the-art science labs and a large dance studio.

Several of the external-facing walls on the brand new Ritterman Building, a purpose-built teaching and learning space, are covered in thousands of plants will help capture, store and recycle rain water. As well as its green walls, the Ritterman Building features a bio-diverse green living roof, solar panels to generate electricity and energy-efficient lighting controls.

The Ritterman Building's Living Wall has featured in a new BBC series about pollution called 'So I Can Breathe'.

In the segment shown on BBC London, Senior Lecturer in Bioscience and Biomedical Science Dr Dirk Wildeboer talked to journalist Anna O'Neill about his research exploring the potential environmental benefits of living green walls in urban spaces.

"As space is often limited in built-up environments, the installation of green walls on existing buildings or the incorporation of living structures into new buildings provides an innovative solution to urban greening," says Dr Wildeboer.

Since 2000, Middlesex University has invested over £200 million to create one of the best campuses in London and continue its reputation among employers for graduates taught in industry-standard settings and equipped with the skills they need.

# OPEN DAYS
**Join us at one of our Open Days**

Our undergraduate open days are a great way to help you make your decision about Middlesex. As well as experiencing our outstanding facilities and getting a feel for life at Middlesex, you'll get to meet staff and students and have your questions answered about your course and on general subjects such as admissions, fees and funding and finding accommodation.

**http://www.mdx.ac.uk/get-in-touch/meet-us/ug-open-days**

**OUR NEXT OPEN DAY**
Saturday 07 October 2017

**FUTURE EVENTS**
Saturday 07 October 2017
Saturday 25 November 2017
Saturday 03 February 2018
Saturday 09 June 2018

## DESIGN ENGINEERING
**Have a look at our Design & Engineering courses...**
**http://www.mdx.ac.uk/courses/undergraduate/design-engineering**

## BIOMEDICAL ENGINEERING
**Have a look at our Biomedical Engineering BEng (hons) MEng courses...**
**http://www.mdx.ac.uk/courses/undergraduate/biomedical-engineering**