The front cover of this year’s UCLIC newsletter shows one of our most recent prototypes for generating tactile images for visually impaired. Different to other approaches for generating interactive tactile images, we use a modified low-cost 3D printer and custom tactile image mechanics, and this low-cost approach will allow us to make this technique more widely accessible and customisable. Going beyond braille pixel displays, our technique allows to render actual 3-dimensional shapes and objects. The project is based on two of our past distinction HCI MSc project dissertations by Sandeep George and Jim Neussl, and run by Tigmanshu Bhatnagar, Catherine Holloway and Nic Marquardt. The publication of the innovative tactile printer design is currently under submission, and the project was just awarded one of the UCL – IIT Delhi Strategic Partner Fund grants to support the next stages of the research project.

Many thanks to our Photographer Jake Fairnie.
Welcome to our UCLIC newsletter for 2020

Since the last newsletter, we have grown again, welcoming three new academic staff members: Youngjun Cho, Aneesha Singh and Tim Adlam. We have also had a remarkable two years of graduating our PhD students, with 15 of them successfully completing. Many have moved onto postdoc positions and lectureship posts, while others have taken up research posts in industry and UX consultancy.

Our HCI programme continues to be very healthy; each year we recruit about 55 students to our MSc from the many hundreds who apply from all over the world, from a variety of backgrounds. Last year, we launched a new MSc in Disability, Design and Innovation, which combines design engineering with global policy in the societal context of disability. It is taught by three London institutions together, providing a diverse and interdisciplinary degree course; UCL, Loughborough University London and the London College of Fashion.

For more information see: disabilityinnovation.com/education/msc-ddi

Each year I give a talk to our MSc students about the prospects of an academic career. One of the joys is being able to collaborate with researchers in many different countries, including those in Europe, India, Africa the US and Australia. Many of us have obtained grants that have allowed us to continue working with others in a variety of areas, including health, wellbeing, humane AI, coding, and assistive technology and accessibility – some of these we highlight in the newsletter.

Finally, I am delighted to congratulate Anna Cox and Duncan Brumby for their promotion to professors. They will both be giving their inaugural lectures this year as a celebration of their great achievements.

Yvonne Rogers
UCLIC Director
New arrivals in UCLIC

In 2018 several of the previous cohorts of PhD students finished their studies, and some of them remained at UCLIC to continue their careers as research fellows. One was Dr Giulia Barbareschi who in December 2018 joined UCLIC and GDI Hub as a Research Fellow in Disability Innovation on the £20 million programme “AT2030 – Life Changing Assistive Technology for All” funded by the UK Department for International Development.

Before re-joining UCLIC after completion of her PhD on Disability and Assistive Technology, Giulia worked with the WHO on the development of an on-line module to support community health workers in low-resourced settings in providing basic assistive technologies to people with disabilities.

Her work focuses on understanding how current and novel technologies are used to improve the lives of people with disabilities who live in the Global South.

Her work lies at the intersection of technology, disability and design with strong influences from disability studies and social development. As part of her work Giulia designs and implements studies with other universities, private institutions and NGOs to evaluate the impact of using different types of technologies, from mobile phones to prosthetics sockets, for people with disabilities who live in low-and-middle income countries.

Most of her current work under the AT2030 project is based in Kenya such as the clinical trial with the prosthetic company called Amparo GmbH that is investigating how the use of thermoplastic materials could revolutionise how lower limb prosthesis are made. Another example is the work with Motivation UK that is testing the use of Computer Aided Design and 3D printing to manufacture customised wheelchairs for people with disabilities.

Giulia is also interested in mobile technology and social systems, and her work on how people with visual impairment who live in informal settlements use their mobile phones to access their social support systems (and vice versa) will be presented at CHI2020.

In her spare time Giulia is also interested in education and computing and she works with Dr Enrico Costanza and Dr Catherine Holloway on the Tactile Inclusive Programming (TIP) – Toy project that aims to develop an open-source toolkit that would enable visually impaired children to learn basic programming concepts.
December 2018 saw the arrival of a new associate professor to UCLIC. Dr Tim Adlam is an engineer, designer and clinical scientist, and his work focuses on the creation of technology to enable disabled people to do what they want to do.

Tim has joined UCLIC from Designability, where he has worked for over 20 years creating diverse technology for disabled people, and where he still works for 1 day / week as principal engineer. Previously he has helped to create dynamic seating for children with complex motor disorders; mobility for preschool children; bikes for children with dwarfism; smart house systems for people with dementia; in-home assessment of older people’s nutrition; robotics for frail older people; phantoms for calibrating tools for medical imaging technology and a low-cost fracture fixation device.

Tim is currently working on several research projects. PRIME-VR2 is a European H2020 project to create accessible virtual reality therapeutic environments for disabled people and people with sports injuries. Working with partners across Europe and within UCL Computer Science, Tim is leading the project's engagement with disabled people, ensuring that the design of accessible virtual reality games, controllers and environments is based upon a solid understanding of the users’ needs and preferences; and that the new solutions are developed with the people that will be using them.

Tim is also exploring the development of powered mobility for young children in Kenya. Children as young as 12 months need to be able to explore their physical and social worlds and make choices about what they want to do. This is important for their development socially and intellectually. Making powered mobility a reality for young children in the Global South is a complex task that requires innovation not just in wheelchair design, but also in-service design, manufacturing and logistics.

Tim is also running a programme of research into dynamic seating technology for children with complex dystonic cerebral palsy. Children learn to move by moving, and use their movement to learn new skills and about how the world works: Learn to Move - Move to Learn. For children with dystonia who experience whole body spasms throughout the day, having a seat that accommodates these powerful involuntary movements means that they can be more comfortable and have the opportunity to use their movement to develop new skills.

Tim is also part of the Global Disability Innovation Hub (GDI Hub), created as part of the legacy of the 2012 London Paralympics is a research and practice centre driving disability innovation for a fairer world. GDI works across five interactive domains: research, innovation, programmes, teaching and advocacy. Recently Tim led the GDI Hub’s support for the Smart Cities Hackathon in Egypt, based at the National Academy for Information Technology for Persons with Disability (NAID). Tim and his colleague Ben Oldfrey helped to develop the hackathon curriculum, mentored twelve teams through an intense three day process of ideation, design, prototyping and business model development; and judged the winning projects that will go on to be supported by the Egyptian ‘Tamkeen’ accelerator programme. Work like this helps to build capacity for effective disability innovation that can make a difference for many years to come.

Tim also has a passion for educating the next generation of problem solvers who will be helping to make better lives for disabled people. He is leading the new Disability, Design and Innovation MSc at UCL (MSc DDI). Partnering with Loughborough University London and the London College of Fashion, the MSc DDI is pioneering a new approach to disability innovation that equips its students with the skills and knowledge they need to solve complex entangled problems faced by disabled people across the world. It takes a problem-focused multidisciplinary approach to design education, bringing together a team of experts in disability and innovation from GDI Hub at UCL, design thinking and problem solving from Loughborough; and business and marketing from the London College of Fashion. Students on the MSc have been supporting projects with UCLIC academics, including PRIME-VR2, and one will be presenting her work at the CHI 2020 conference.

Tim is a husband and the father of two children, one of whom is disabled and has taught him much about what is important. He loves to sing and play music, and canoes on local waterways near his home in Wiltshire.

**Website:**

www.disabilityinnovation.com

**Email:**

T.adlam@ucl.ac.uk

Tim helps these charities to make life better for disabled people; perhaps you could too!

Designability Charity:

www.designability.org.uk

Stepping Stones District Specialist Centre for disabled children:

www.steppingstonestrowbridge.co.uk/home.html
Youngjun Cho is a lecturer in Global Disability Innovation. He explores, builds and evaluates novel techniques and technologies for the next generation of Artificial Intelligence-powered physiological computing to boost disability technology innovation. He obtained a PhD from UCLIC!

Before returning to academia, he worked as a specialist in machine learning for human-computer interaction at LG Electronics (full-time: 2011–2015, leave of absence: 2015–2018). He led a wide range of industrial research projects and successfully commercialized his novel interaction interfaces and sensing technologies. An example is Advanced Touchscreen with in-air gesture control which is equipped in Porsche Panamera cars.

His current research focuses on designing physiological computing technology that can sense our bodily functions, psychological needs and provide intervention. In particular, he has pioneered mobile, low-cost imaging for physiological sensing and mental stress monitoring. In a recent project funded by Bentley, he and Nadia Berthouze’s team have been exploring human comfort through physiological monitoring. Also, his team has been investigating physiological computing as a research tool to understand the barriers that disabled people face in the real world.

Youngjun is actively involved in innovation, enterprise and commercialization activity. He is a co-founder of a UCL spin-out company (KIT-AR) which has resulted from the EC Horizon 2020 HuMan project and has contributed to the creation of new jobs in Artificial Intelligence and Augmented Reality.

Also, he enjoys teaching which he believes is a process of active and collaborative learning. In 2019/20, he has been supervising more than ten UG/MSc students.

To get to know more about Youngjun, please check out: uclic.ucl.ac.uk/people/youngjun-cho and www.disabilityinnovation.com/about/team/youngjun-cho

Heart Rate and Stress monitoring using a smartphone camera

Understanding VR accessibility for people with dyspraxia through thermal imaging
Aneesha Singh joined UCLIC as a Lecturer in September 2018. Prior to this she was a postdoctoral fellow in UCLIC. Aneesha received her PhD at UCLIC in Human Computer Interaction and her MSc in Evolutionary and Adaptive Systems from the University of Sussex. Before that she has worked in industry in various roles as a software consultant, analyst and project leader, and as a technical journalist.

Aneesha’s research focuses on how ubiquitous, pervasive and IoT technologies for health and wellbeing can be designed to fit in with everyday contexts of daily life, work and play and in how people’s understanding of themselves can be augmented and enriched through interactive technologies. She uses qualitative and mixed methods and prototypes to investigate technology use in the wild. Her research projects have so far focused on diverse conditions such as rehabilitation and self-management of physical activity in chronic pain, autism, HIV and body image disorders. In her studies with people with chronic pain, she focused on the problem of increasing physical activity despite emotional barriers faced by people and created novel technology and frameworks to address the problem. The insights, frameworks and technologies from these studies have been extended to different populations and technologies.

Her research typically follows a highly collaborative and inter-disciplinary approach to technology design that places end-user participation and evaluation at its core. She is passionate about designing technologies for inclusion that can positively transform people’s social and emotional lives; a large amount of her research examines the practical and ethical dimensions of conducting participatory design (and participatory research in general) with people, especially in sensitive contexts and with people with heightened vulnerabilities. Therefore, she has an ongoing interest in understanding the methods and techniques used for involving people in design and research processes.

Currently she is working on using digital technologies to support adolescents in exploring their own self-identities to promote resilience and wellbeing. She is also interested in the use of technology to facilitate the building of empathy through sharing information about people’s conditions, especially for invisible, sensitive and stigmatised conditions.
Interaction Design: Beyond Human-Computer Interaction now in its fifth edition

The fifth edition of Yvonne Rogers co-authored textbook with Helen Sharp and Jenny Preece came out in 2019. It was launched at our book party during the CHI’19 conference. This time we chose a lime green cover that is as striking as the last orange one! The textbook has had a major revision, including adding a new chapter on ‘data at scale’ that covers key methods for collecting and analysing HCI big data, data visualisation tools and techniques, and ethical design concerns that the new ways of collecting and analysing data raises, especially personal data. The website was also updated with many new resources, including talking heads and updated slides: www.id-book.com

Our foray into creating an ebook version turned out to be disappointing as it never really took off. So we did not update that. Instead, the paper version continues to be the textbook of choice worldwide, having now sold well over 250,000 copies. It seems students still prefer having a physical book in their hands.
How a game of Tetris is a better stress buster than mindfulness

UCLIC research has shown that people who played 10 minutes of Tetris felt more relaxed than after using popular Mindfulness techniques. A second experiment found that playing a computer game after completing a strenuous task solving mathematical equations left people feeling less tired than using popular Mindfulness apps. Anna Cox said: ‘We need to stop making people feel bad about playing games on their smartphones because they can really help people detach’. The story was picked by 109 news outlets (https://tinyurl.com/rpq7kfm) including an article in UK newspaper the Daily Mail (https://tinyurl.com/y2ymhz2r). An open access version of the paper is also available: https://tinyurl.com/slclzfr

Dark mode is not as good for your eyes as you believe

Researchers Ana Cox and Aneesha Singh explained the benefits and drawbacks of Dark Display Mode on mobile phones and tablets in an article in Wired (https://tinyurl.com/y6i9hmjr). They evaluated questions such as ‘Does dark mode really help eyestrain?’ and ‘Does it make text more legible?’ It is a very interesting and insightful read!

Prof Anna Cox appointed as specialist advisor to the DCMS select committee at the House of Commons

Anna Cox was appointed as Specialist Advisor to the DCMS Select Committee at the House of Commons for the inquiry into Immersive and Addictive Technologies. The inquiry examined the development of immersive technologies such as virtual and augmented reality, and the potential impact these could have in the worlds of sport, entertainment and news. The inquiry also looked at how the addictive nature of some technologies can affect users’ engagement with gaming and social media, particularly amongst younger people. The report was published in September 2019 (https://tinyurl.com/y2cbrefk).
Movers and Shakers cont.

**Bremen Excellence Chair**

Yvonne Rogers was awarded an Excellence Chair from Bremen University that runs from 2020–2025. It provides a grant of 720,000 euros and is awarded to only eight “outstanding experts in their disciplines that represent bridgeheads for collaboration with leading institutions worldwide”. The chair is intended to enable collaborative projects to be fostered with researchers at UCLIC. As part of this initiative Yvonne will build up a team to compliment her projects running at UCLIC, exploring how personal data when combined with AI techniques can be used, from a human-centered perspective, to improve the quality of healthcare. Areas that can benefit from this synergy include clinical decision support, disease surveillance, and population health management. Discovering new associations and understanding patterns and trends within the burgeoning health data also has much potential to improve care. The aim is to enable healthcare providers to be better informed and develop more thorough and insightful diagnoses and treatments.

For example, designing new interfaces for visualizing health data that can better elucidate what is behind the numbers; supporting clinicians in being able to detect vulnerabilities within patient populations during disease outbreaks.

The trans-European team will develop new multimodal interfaces (voice, agents and GUIs) by transforming how data is understood and acted upon by clinicians and patients, through combining a novel form of human-computer interaction (HCI) with artificial intelligence (AI).

The goal is to firstly, make health data more accessible, by developing a natural form of data-interaction, and, secondly, amplifying human cognition to enable clinicians to make better decisions. This will entail building a voice interface as a front end to enable users to explore and interact with visual data analytic tools and data visualisations, together with modelling certain aspects of human conversation and data analytic strategies, using AI and machine learning algorithms.
15 Students Awarded PhD’s

We are very proud that 15 students supervised by UCLIC staff have successfully been awarded their PhD’s since the last Newsletter was published in 2018.

Judith Borghouts  
Frederik Brudy  
Marta Cecchinato  
Youngjun Cho  
Melanie Herrmann  

Susan Lechelt  
Joe Newbold  
Nicola Newhouse  
Temitayo Olugbade  
Olga Perski

Jacob Rigby  
Anna Rudnicka  
Britta Schulte  
Geraint Sethu-Jones  
Rhys Williams

Youngjun Cho is now a Lecturer in UCLIC and Joe Newbold is working in a Post-doc position with Anna Cox. Others have gone onto Post-doc and lecturer positions at UC Irvine, University of Northumbria, University of Bristol and Bauhaus University.

Inaugural Lectures

Two UCLIC staff will be giving their Inaugural lectures in 2020, Professor Anna Cox and Professor Duncan Brumby.

Anna’s lecture, *Fitter, happier, more productive? Using mobile technologies in the digital age*, is taking place later in 2020.

Duncan’s lecture, *Digital Overload: Understanding how people multitask and overcome interruptions in human-computer interaction* is being held on Wednesday 13th May 2020.
GLOBAL DISABILITY INNOVATION HUB
Creating the next generation of disability pioneers

Global Disability Innovation Hub (GDI Hub) research and practice center (based at UCL Here East) is enabling students for the first time to explore the multi-disciplinary field of Disability, Design and Innovation. GDI Hub drives disability innovation for a fairer world. A legacy of the 2012 London Paralympics, the GDI Hub is at the forefront of the global Assistive Technology movement, and is currently delivering AT2030 (Life-Changing Assistive Technology for All) a £20m UK aid funded programme to reach over nine million people by 2020, testing new approaches and backing ‘what works’ to get AT to those who need it.

Why Disability Innovation

Only 10% of the world’s one billion disabled people have access to the assistive technology they need, by 2050 this figure is set to double to two billion. New technologies provide opportunities for scalability and access, while individuals, communities, business, and governments are increasingly understanding the importance of the disability innovation space.

Disability, Design and Innovation MSc – a Master’s programme for an emerging field

To power dynamic solutions, a new generation of solution-focused entrepreneurs is required. The GDI Hub’s MSc in Disability, Design and Innovation has been developed in direct response to this pressing need, providing the skills and knowledge for students to excel within this emerging field. Taught across UCL, Loughborough University London and the London College of Fashion, students experience a unique a fast-paced learning environment, where theory is immediately taken into practice and learning is delivered across multi-disciplinary institutions.

As the first cohort of students reach the half-way point of their studies, successes are already emerging. Under the supervision of Dr. Youngjun Cho, a talented student Katherine Wang has written an original research article: “Using Mobile Augmented Reality to Improve Attention in Adults with Autism Spectrum Disorder”. This explores the use of augmented reality technology on mobile phones as a cost-effective intervention to improve attention management skills for autism spectrum disorder. The paper will be showcased at the ACM CHI 2020 LBW Conference on Human Factors in Computing Systems, the premier international conference in this space.
Students have also been working to support the European PRIME-VR2 project, researching virtual reality (VR) technologies for people with disabilities and sports injuries, including a literature on VR technology for rehabilitation, and technology to enable disabled people to control virtual reality games.

**Driving Disability Innovation in East Africa through the Innovate Now Accelerator Programme**

On the 3rd of December 2019, for the International Day of People with Disabilities, GDI Hub launched the world first accelerator focused specifically on supporting start-ups working on developing assistive technology solutions for people with disabilities. The accelerator, part of the UK Aid funded AT2030 programme, is delivered in partnership with Amref Enterprises Limited and it aims to support ventures through a combination of expert mentorship, dedicated design toolkits, access to a network of Live Labs for rapid user testing, as well as access to seed funding.

The first cohort of innovators features a combination of start-ups working on disruptive ideas ranging from novel service delivery models to improve screening and provision of glasses, to smart canes that incorporates sensors and IoTs features, to portable commode-like toilets to make sanitation accessible in rural areas and informal settlements.

“We have entrepreneurs in this Assistive Technology space. However, the majority of the businesses fail not because they are bad ideas, but because they lack funding since investors are unwilling to engage in businesses that have undefined costs and undetermined demand. We are certain that this accelerator program will help increase the demand for these technologies and ultimately help the businesses grow,” said Bernard Chiira, Innovate Now Director.

Researchers at UCLIC and GDI Hub in collaboration with Maynooth University and the University of Nairobi are conducting research alongside the innovators enrolled in the programme and other actors to understand the factors which facilitate or hinder the development of innovations targeting people with disabilities and adjust the market conditions necessary for these to be impactful.

**East London Inclusive Enterprise Zone (ELIEZ)**

The GDI Hub is proud to be a founding member of the ELIEZ project, launched in September to deliver the UK’s most accessible technology hub. The £1.2 million project will receive £500,000 from Research England, match-funded by the partners. Alongside UCL, Plexal, Here East, Disability Rights UK and other community partners, the ELIEZ programme includes an accessibility optimised innovation lab, designed to accelerate products and services from idea stage to global deployment. Both the Plexal innovation centre and UCL’s advanced engineering capabilities will be adapted as part of the design process, based on the recommendations of an expert panel led by Disability Rights UK. The project will also coordinate the delivery of accessible innovation education, training and events based at the Here East campus.
East London – the home of innovation

In 2019 GDI Hub Academic Director Dr Cathy Holloway was recognised as one ‘50 East London Innovators’ by Here East for her work leading the GDI Hub. Outstanding members of East London’s business, cultural and social communities were celebrated in an event that highlighted their ‘skills, knowledge and passion to help solve real-life problems’. Dr Holloway’s profile was also included in a book and a wider campaign featuring the 50 East London Innovators.

Dr Catherine Holloway, Academic Director of the GDI Hub says: “The global potential for disability innovation is huge and the disability interaction agenda which we have developed in UCLIC is crucial to this. New technologies provide opportunities for scalability and access, but to accelerate this movement we need a new generation of pioneers. There is no-where better then East London to deliver this global vision. The GDI Hub sits within an eco-system of innovators, designers and change makers; we are at the heart of a dynamic community forming new ways of thinking through collaboration, partnerships and enterprise. As building commences on the UCL East campus, we look to the future, capturing the energy and dynamism of East London to drive our ambition and create a fairer world for all.”

AT2030: https://at2030.org
Disability, design and Innovation MSc: https://www.ucl.ac.uk/prospective-students/graduate/taught-degrees/disability-design-innovation-msc
European PRIME-VR2 Project: http://prime-vr2.eu/
GDI Hub: https://www.disabilityinnovation.com
UCL Here East: https://www.ucl.ac.uk/here-east/
UCLIC staff are co-investigators on various healthcare engineering projects, including the i4health Centre for Doctoral Training (CDT, focusing on medical imaging) and the Wellcome / EPSRC Centre for Interventional and Surgical Sciences (WEISS). Within i4health, our early focus is on including HCI in the training of all students within the CDT so that, even if their individual projects are highly technical, students are aware of the challenges in ensuring that future technologies address user needs, and of approaches to making technologies fit for practice.

Within WEISS, Ann Blandford and team (including former WEISS member Niels van Berkel and new member Jeremy Opie) are working with clinicians and engineers to improve our understanding of how to design technologies that support clinicians in their work and fit with clinical practice. In an early study, we investigated the preferred form of the notification and visualisation of potential polyps as presented to colonoscopists in real time based on artificial intelligence (AI) algorithms.

In a parallel study, working with liver surgeons and WEISS engineers, we have been investigating the usability of a laparoscopic surgery system to enable the surgical team to view an augmented reality overlay of key liver features (e.g., veins, arteries) to complement the existing direct camera view. Our first study has focused on different approaches to initialising the system (Figure 4), taking into account practical considerations such as the need for sterility in surgery. Designing the study, considering factors such as who to recruit, how to train participants, and when and where to run the study, led us to develop a framework for study designs focusing on seven dimensions of ecological validity (user roles, environment, training, scenario, patient involvement, software, and hardware).

These are early studies, and we are looking forward to working further with clinicians and engineers so that we can make a real difference in clinical practice, patient experiences, and health outcomes.
EnTimeMent: Entrainment & synchronization at multiple time scales in the mental foundations of expressive gesture

We are now starting the second year of EnTimeMent, an exciting collaborative H2020 FET Project (2019–2022) that aims to create the foundation of a radically new motion analysis technology and develop new technologies for automated prediction and analysis of human movement qualities, entrainment and non-verbal full-body social emotions. The project explores the above questions from a multidisciplinary perspective (Neuroscience, Computer Science, HCI, Music and Applications) and takes a novel neuro-cognitive approach of the multiple, mutually interactive time scales that characterize human behaviour. The role of UCL in this project is to inform the design of new wearable sensing technology to support people with chronic pain during physical therapy and everyday functioning. We are exploring how the experience of pain is expressed through body movement at different time-scales and how new technological development based on machine learning techniques needs to take into account such multiple temporal scales when modelling automatic pain behaviour detection and technology-based pain management intervention. With respect to the latter, we are exploring the use of music sonification of body movement to support body movement exploration, awareness of capabilities and to facilitate entrainment. The grant has contributed to the first Workshop on Recognition, Treatment and Management of Pain and Distress organized at ACII’19 by engaging clinical experts and physiotherapists with the pain computing world.

UCL Team: Nadia Berthouze (UCLIC), Amanda CdeC Willians (Clinical Psychology) Nicolas Gold (Computer Science) and Temitayo Olugbade, Chongyang Wang, Santiago De Ossorno Garcia (UCLIC)

Grant agreement 824160.

https://entimement.dibris.unige.it

Follow us on Twitter: @EnTimeMent
A team from UCL are through to the second stage of a competition led by Snap Inc, Microsoft Research and BBC R&D international challenge to reimagine the future of storytelling with Augmented Reality. Teams have been tasked to take a multi-disciplinary and multi-cultural approach to reveal AR as the next major storytelling platform.

The UCL team is led by Professor Simon Julier, Professor Dinah Lammiman and Professor Yvonne Rogers. The team comprises two Human Computer Interaction PhD students: Sheena Visram (team lead) and Kuba Maruszczyk, two Masters students in Immersive Factual Storytelling: Yige Guo and Yinggui Yang and one PhD student in Virtual Environments: Dan Archer.

Through engagement with hospital guides and healthcare professionals they have already started to apply human centred design principles to create a mobile AR technology companion that will educate and enchant children about prominent healthcare topics.

Students will show case their work through lightening pitches and mini-exhibitions at an event co-hosted at ACM IMX 2020 in Barcelona, Spain in June 2020. Teams will be judged on the novelty, topical alignment and feasibility of their solutions. The event will culminate in a meta-discussion on the challenges and opportunities revealed by the project, future funding openings and community-building efforts around AR and storytelling. The project will finish with the publication of a position paper drawing on the experiences of all participants.
GETAMOVEON Network+ Update

The GetAMoveOn Network+ is an EPSRC funded project running from May 2016 to December 2020, led by Professor Anna Cox from UCLIC, with Professors Ann Blandford (UCLIC), Lucy Yardley (Southampton), m.c. schraefel (Southampton) and Ian Craddock (Bristol). The network launched in December 2016 and we’re now in our final year. Our aim is to transform health by getting people moving more with the help of digital technologies. Our research agenda is summarised in our symposium report and accompanying video.

Developing the Network

Our network has grown to 319 academics and practitioners across 131 institutions in 23 countries representing disciplines from human computer interaction, sensor networks and data analytics, to interactive visualisation, behaviour change and sports science.

Promoting interdisciplinary collaboration

We have held 8 workshops to explore research challenges and promote interdisciplinary collaboration to address them, covering a range of themes from behaviour change, to physical activity at work, to the relationships between mental health, physical activity and technology.

Capacity building

Since launch, we have run six training events attracting 288 delegates. Over the last year we have focused on developing a cohort of ten Network Fellows. These early career researchers have been trained in making successful grant applications, presenting themselves and their research in the media, maximising impacts from research and developing academic collaborations. We’ve included a searchable profile of each in the Find An Expert section of our website and a video profile of each on our YouTube channel.

Pump-priming research

Our 8 feasibility projects have explored diverse challenges, from creating a next-generation wheelchair tracker, to using Alexa to motivate families to adopt healthier habits, to developing a new app to help middle-aged football fans get match fit. You can download the project reports on our website. We have awarded additional funds to our Fellows to develop ideas for collaborative projects which will explore digital technology to support exercise snacking for older adults, incorporating behaviour change techniques into technology design, and the impact of wearables on physical activity of cancer patients.

Engaging with stakeholders and the public

Over 700 people have engaged with our work through six public engagement events which have explored themes ranging from designing wearables for primary care
settings, to how people feel about their health data, to how we can represent data from activity trackers in more meaningful ways.

One particular highlight was our Policy Dialogue held at the ukactive National Summit in October 2019, attended by over 200 policy-makers, fitness industry professionals and business leaders. We have also produced 26 videos about our research challenges and the projects we’ve funded, which have been watched 3203 times on YouTube for over 120 hours. We secured additional grants from UCL’s EPSRC Impact Acceleration Award to support development of our Rapid Response to the government’s Prevention Green Paper and our Policy Dialogue. You’ll find more on these in separate article in this newsletter.

What’s next?

We have made significant progress in delivering across the strands of our planned work. In this our final year of funding, we’re planning a citizen science project, a knowledge exchange project to develop guidance for practitioners on the use of digital technologies to support people to move more, and further engagement with policy makers and practitioners in collaboration with our partners at ukactive.

Join our network and receive our email newsletter about events, other activities and funding opportunities: https://getamoveon.ac.uk/join

Anyone who is interested is welcome to join.

Visit our website: www.getamoveon.ac.uk

Follow us on twitter: @GAMOnetwork
The X5Gon project is an EU Horizon project in its last year. During its three year life time, we have, along with 7 other partners from the France, Slovenia, Germany and Spain, conducted a body of research to help students, teachers and the general public learn effectively and enjoyably by providing personalized user journeys using open education resources (OERs), such as talks, lectures, texts, slideshows and online activities. We have built a platform that consists of four major components, (i) the database, (ii) ingesting and processing pipeline, (iii) services and (iv) an API – each employed to perform a separate task. The platform is able to process three types of OER materials: text, video and audio. The database is accessed by the different services developed within the project, (i) the recommender engine, (ii) the quality assurance tool and (iii) the learning analytics tool and (iv) transcription and translation services – which can be accessed through the platform API.

A central part of the project has been public engagement; we have invited OER sites across Europe, United States, Asia and Africa to join our platform. At this time, we have 100,000 OER materials with 1.7 million user activities. The feedback from these adopters has been fed back into the technical architecture. A dashboard was also developed to provide personalization mechanisms and a quick look up tool, that can allow students and teachers to determine rapidly if a video or text the system has selected contains coverage of the topics they are interested in. Two in-the-wild studies were conducted comparing different user interfaces for studying with OER. The first in-the-wild study focused on peer involvement by investigating how learners can benefit from using OER in pairs; the second evaluated how learners used the interactive mechanism for previewing content and reflecting on their progress. A number of hackathons have also been run on open education and AI, including one in Paris.

Prof Yvonne Rogers is a Co-I on the project. Stefan Kreitmayer was a post doc for two years. Sahan Bulathwela is a research associate currently working on the project.
Along with a number of other partners from Europe, UCL were involved in developing a EU-funded network of HCI and AI researchers. Our vision is to know how to develop AI systems that augment and empower humans by understanding them, society and the world around them. However, AI is a two-sided coin: it can either empower individuals and society, creating many opportunities to improve human experience, or it can create the tools that can destroy us, enslave individuals, while concentrating the power and wealth in the hands of a few. Humane-AI is intended to understand and critique both; but with a focus on representing a community of researchers and innovators to create the conditions for AI technologies that can empower humans and human society to improve their quality of life. But how can we facilitate AI systems that enhance human capabilities and empower people as individuals and while assuring evolution of a healthy and nurturing society? A central part of our network involves exploring the symbiosis of humans and AI systems to work together, and how new AI technologies can be designed and implemented that are ethical.

A report on the goals and aspirations of Humane AI can be found at: www.humane-ai.eu

Yvonne Rogers has recorded a video interview with Humane AI giving her opinion on Human-centered AI and her idea for a ‘blue sky’ project for AI in Europe.

You can watch the video here: www.humane-ai.eu/yvonne-rogers-university-college-london
We start with a massive congratulations to the class of 2019, which saw 16 HCI MSc students being honoured in the UCL Faculty of Brain Sciences Postgraduate Dean’s List (https://www.ucl.ac.uk/brain-sciences/news/2020/jan/deans-list-top-performing-students-201819-announced). This award is given to the top 5% of students across the faculty of Brain Sciences at UCL. With an astonishing 30% of HCI MSc students achieving this prestigious award, it attests to the outstanding academic performance of our students within UCL. Congratulations to the class of 2019 on this achievement!

The Human-Computer Interaction MSc: https://www.ucl.ac.uk/prospective-students/graduate/taught-degrees/human-computer-interaction-msc is concerned with the design and use of computing technology, focusing on the interfaces between people and computers. This interdisciplinary degree programme sits at the intersection of engineering, behavioural sciences, and design. Students acquire the research skills necessary to understand how people interact with computers and the design skills for constructing the digital products and services of the future.

The programme combines academic rigour with practical and professional skills that are highly valued by employers. Our innovative approach to teaching combines the best of lectures, online materials, and practical activities. Activities are often structured around individual or group projects, such as the evaluation of a system or the creation of a prototype. The programme is assessed through varied coursework, exams, and an individual research project.

Each year teams of students on the HCI MSc submit their coursework to the CHI conference. At CHI 2019: https://chi2019.acm.org/ team PALS: https://doi.org/10.1145/3290607.3309690 made it to the final four in the Student Design Competition: https://chi2019.acm.org/authors/student-design-competition

Following in their footsteps, a group of current HCI MSc students will be competing in the final of the Student Game Competition: https://chi2020.acm.org/authors/student-game-competition at CHI 2020: https://chi2020.acm.org


We actively encourage HCI MSc students to present their work at prestigious international events. In 2018 we established the UCLIC MSc HCI Travel Bursary to support our current and former students attending international conferences to present work completed while studying on the HCI MSc programme. Below is a selection of student-led research projects that have recently been presented at major international conferences with the support of a UCLIC MSc HCI Travel Bursary:


The strength of the research conducted by our HCI MSc students has been further recognised by awards from the Chartered Institute of Ergonomics and Human Factors www.ergonomics.org.uk

Tassilo Bouwmam received the 2019 Ulf Aberg Award for Best Postgraduate Project and Chloe Ng was runner-up for this award in 2020. To get an idea of the breadth and depth of research work undertaken by our students take a look at Distinction MSc Projects published on our website: https://uclic.ucl.ac.uk/study/current-taught-course/distinction-projects

Our alumni have pursued careers with technology multinationals, start-ups, government agencies, consultancies and in academia. Many take up roles such as User Experience (UX) Researchers, Interaction Designers, Usability Specialists, and Information Architects. We have a large network of alumni working in London and across the world. Many of them are involved with our industry speaker series and careers events, and they regularly send opportunities to our jobs mailing list for recent graduates.

For more details about the Human-Computer Interaction MSc please contact:

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Jo Pearson jo.pearson@ucl.ac.uk Teaching and Learning Administrator
When I was asked to write about my experiences of being on and returning from parental leave, I jumped at the opportunity. Here is my attempt to narrate my experiences from this sleepless and completely bewildering yet utterly magical and wondrous year.

Our beautiful baby girl, Y, was born unexpectedly a whole week before I was due to go on parental leave. Y as we now know, is a determined, if slightly impatient, little thing and more often than not manages to get her own way. It wasn’t a completely new gig as we have an older one already, born during my PhD a few years ago.

It still felt like a new experience – I’d recently accepted my appointment as a new lecturer in UCLIC and felt guilty about taking leave. Just as I should have been ramping up my research, I was about to walk away for almost a year. However, as one of my mentors said, there is no good time. My colleagues were generous with their congratulations, advice and concrete offers of support and I felt lucky and grateful – but never ready.

Ya arrived and it’s true – nothing prepares you, even second time around, for the intense and exhausting first few months. Even when you think you’ve cracked a routine, something soon comes along to disrupt it – a growth spurt, a new tooth, a mental leap, vaccines, bugs, new milestones – disruption was the new normal. But this time with the older one in the picture, it wasn’t as easy as ‘sleep when the baby sleeps’, as if that works anyway. Regardless, it’s been a brilliant time – I’ve loved watching the little one develop and being part of the older one’s adventures as she grows and navigates being an older sibling among other things. It’s also often felt chaotic. Life with two children is something else! I managed some
fitful reading and thinking about my research – nothing close to what I imagined I would achieve. One highlight was attending CHI – it was great as colleagues cooed over Y sleeping in a sling and a supportive community welcomed us into talks and conference dinners, we even danced in a ceilidh and Y got her first conference badge!

It went in a flash: Y went from stationary to crawling to standing and climbing the furniture and just like that it was time to come back to work – it felt like I'd just blinked! Close family and friends had made sure that we stayed sane and did not lose ourselves in diapers and feeding routines. We travelled, a highlight being a trip to India to see my 93 year old Grandmother. Colleagues sent me news and visited me. Yet, in the days leading to my return, I felt anxious (along with the excitement). How would we cope with all getting out the door and to places on time? My familiar friend, Imposter Syndrome, raised its head. Would I remember anything after all this time, would I fit in? It was also time to think of childcare. UCL offers a three month sabbatical after parental leave – this was invaluable time that gave me some flexibility and time to ease into work by reading, writing and thinking about research and to test run childcare choices.

As I write this, I’ve dropped off my now one-year-old daughter to the childminder’s – I feel guilt but I know she has little friends there and the childminder’s like family (she looked after our first). I rush to the tube to start a familiar journey; yet I miss the snuggled little one who I am so used to carrying everywhere in her little sling. I keep looking back to check that I have not forgotten anything (or anyone!) as I get off at Tottenham Court Road.

‘So how’s it going’, many ask. Well, there is the guilt. Taking care of Y can be a full time job, emotionally and physically exhausting. But she is a delightful mini-person – wilful, articulate, and mobile (recklessly so) – she has a belly laugh, sings Happy Birthday on repeat and shows all four teeth in gummy smiles. I feel guilty leaving her, for enjoying work and others’ company away from her, jealous that she might share first milestones with others. I’m sleep deprived, still sleeping in chunks rather than stretches, and have not yet found a new normal for the times I am most productive. There is much to catch up on, and more to do, it’s sometimes overwhelming; I feel the need to make up for lost time – except that it’s not really time lost. Some old colleagues have moved on so being feels different, yet familiar.

I’m taking it one day at a time. What I’ve learnt so far – talk to those with similar experiences. Build a support network. Look after yourself – sometimes this means saying no – an art I’m yet to master. Make time for loved hobbies – for me this was reading, pottery, swimming and walks. Be kind to yourself and give yourself time – I’m learning new ways to be productive; e.g. work in short bursts. Even 20 minutes is enough for that abstract or email. The guilt and lack of sleep will remain for a while but gets better every day – I am completely present for the children when I see them.

The first year of each of my children’s lives have been the hardest of my life and the most rewarding. I fell madly in love with my two gorgeous, funny little ones and difficult as it’s been, I’ve enjoyed every minute.

Aneesha Singh
Lecturer in Human-Computer Interaction.
@puddlelogic
Highlighted UCLIC Profiles

Richard Jardine

Richard joined UCLIC on a secondment in January 2020 as the Centre Manager to cover for Louise Gaynor while she is away. Richard previously worked as an Executive Officer in the UCL Division of Psychology and Language Sciences based in Chandler House. Richard ensures the effective organisation and smooth running of the centre and is responsible for maintaining UCLIC’s financial records, managing the UCLIC budget and advising staff on financial issues and procedures. As manager, he also undertakes a HR role, manages the recruitment of new staff, and maintains staff files and development records, as well as being responsible for health and safety issues. Richard is the postgraduate administrator for UCLIC PhD students. Richard also acts as PA to the Director of UCLIC, Prof. Yvonne Rogers, and provides administrative support to all members of staff in the department.

Temitayo Olugbade

Temi is a Research Associate on both the EU-funded EnTimeMent project and a Comfort AI project in collaboration with Bentley Motors Ltd, working with Prof Nadia Berthouze. Temi has a BSc in Computer Engineering (Obafemi Awolowo University, 2010), an MSc in Intelligent Systems (University of Sussex, 2012), and a PhD in Affective Computing (UCL, 2018). She joined UCLIC in 2013 as a PhD student, and her research interests include the areas of applied machine learning, behaviour modelling, and affect or cognitive state detection. Currently, she is exploring neural network architectures for modelling bodily-expressed behaviours and associated mental experiences at multiple timescales, and also investigating how car comfort experiences could be automatically detected based on various modalities.

Muna Alebri

Muna is a first year PhD student supervised by Dr. Enrico Costanza and Prof Duncan Brumby. Her PhD research focuses on data visualization embellishments and the general public to aid design. She attained her MSc in Web Technology from the University of Southampton in 2015. Her thesis was on raising awareness about water sustainability using government open data visualization. Her undergraduate degree was in Information Systems. Prior to joining UCLIC, she worked as an adjunct faculty member and a research assistant at Sultan Qaboos University in Oman and a teaching assistant at the University of United Arab Emirates.

Clare Casson

Clare is the Communications and Impacts Manager for the GetAMoveOn Network+, working closely with PI Prof Anna Cox to plan and manage the work programme for the project and keep the budget on track. She organises all the Network’s events such as the launch symposium, workshops, training seminars and academic retreats; runs all the Network’s funding calls; co-ordinates the Fellows’ programme, and manages the Network’s YouTube channel, twitter and website, including writing and editing the blog. It’s a part time role and Clare also works independently as a workplace wellbeing coach/consultant, helping people and organisations to thrive. On the weekends she likes to get out of town to walk in the countryside or by the sea, poke around in antiques warehouses, and last year took on a neglected and overgrown allotment plot which she is gradually wrestling into shape.
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