Cybersecurity Academic Startups Initiative Showcase

Level39, Canary Wharf, London

19th October 2017

Cybersecurity Academic Startups Initiative Stakeholders

Department for
Digital, Culture
Media & Sport

Innovate UK

SETsquared PARTNERSHIP
Universities of Bath, Bristol, Exeter, Southampton & Surrey

ICURe

Innovate UK
Knowledge Transfer Network

CyberExchange
Connect Engage Collaborate

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Introduction

The Department for Digital, Culture, Media and Sport (DCMS) is leading the Government's work to develop the world's best digital economy. We want the UK to be the best place to start and grow a digital business, and the most secure place in the world to live and do business online.

The 2016 National Cyber Security Strategy (NCSS) set out the Government's vision for the next five years: the UK is secure and resilient to cyber threats, prosperous and confident in the digital world. Our three broad strands of activity are to defend our cyberspace, to deter our adversaries and to develop our capabilities.

The UK cannot become the world's leading digital nation and be the best place to do business online unless organisations within the UK are secure and resilient. A crucial part of this is promoting the UK's cyber security sector, ensuring government, industry and academia work together to support a thriving ecosystem of successful, innovative companies.

This work supports DCMS's overall mission, which is **to ensure every organisation in the UK is cyber secure and resilient to support a prosperous digital nation.**

Agenda

Welcome	Dr. Emma Fadlon, Access to Funding & Finance, Knowledge Transfer Network
Keynote	Caroline Nokes MP, Minister for Government Resilience and Efficiency
Seven Minute Pitches from Cybersecurity Academic Startups	
Tabletop Showcase/Demonstrations, Networking & Drinks	

Pitch Running Order

GraphicsFuzz - Hugues Evrard (Imperial College)
Security and Reliability Testing for Graphics Processors

Awen Collective - Daniel Lewis (University of South Wales)
Next Generation Digital Forensics Software Solutions

Cambridge Authentication - David Llewellyn-Jones (University of Cambridge)
Pico: an easier, more secure and more productive login than with passwords

Cyber D3sign - Bo Zhou (Liverpool John Moores University)
Enabling Security By Design and Easy Compliance Check for Business in 3D

Cypher - David Tully (Liverpool John Moores University)
CYPHER - Interactive Cryptographic Protocol Teaching and Learning

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Desktop Integrated Quantum Random Number Generator

Team Profiles

graphics FUZZ

GraphicsFuzz - Imperial College
Security and Reliability Testing for Graphics Processors

GraphicsFuzz offers a testing solution for Graphics Processing Units (GPUs), which are shipped in every desktop, laptop, smartphone, and will be a critical component in self-driving cars. Security and reliability testing of GPUs is becoming paramount as they are being used in security-sensitive devices (smartphones) and for safety-critical applications (autonomous driving).

GraphicsFuzz enables GPU designers to save time and money, and to avoid reputational damage by automatically finding and isolating root causes of GPU issues, before the release of new GPUs. This saves a large amount of expensive developer time. We have already reported issues affecting all seven main GPU vendors: AMD, Apple, ARM, Imagination, Intel, Nvidia and Qualcomm, who comprise our primary market. Tech giants (Google, Samsung) are also interested, and have a record of investing in testing solutions.

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graphics FUZZ

Team Profiles

Awen Collective - University of South Wales
Next Generation Digital Forensics Software Solutions

Awen Collective is developing next generation digital forensics software enabling organisations to easily prepare a digital forensics response plan, and then to efficiently investigate post-incident.

We are tailoring our software specifically for the complex industrial systems found in manufacturing and critical infrastructure – such as energy & water, as they are essential to our society and a significant attack target. Our first customers will be professional services and incident response companies. Additional customers will be information security teams in industry, as well as the police, military and legal systems.

We are seeking key partners, who may be able to provide mentoring and funding allowing us to develop our initial versions.

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Team Profiles

Cambridge Authentication

Cambridge Authentication - University of Cambridge

Pico: an easier, more secure and more productive login than with passwords

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Passwords are still the dominant user authentication mechanism, despite their well-recognized failures in both security and usability: most hacking attacks start by exploiting weak or recycled passwords.

Pico is a privacy-protecting user login system based on the principle that "you shall not have to remember or transcribe secret strings to authenticate". Pico remembers your login credentials for you, acting like a Single-Sign-On in your pocket. Using a different strong credential for each account, it is simultaneously easier to use and more secure than passwords, and pays for itself in productivity savings alone.

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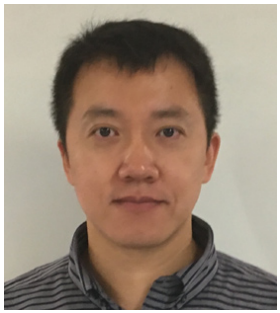
CYBER D3SIGN



CyberD3sign/BPMN3D - Liverpool John Moores University

Enabling Security By Design and Easy Compliance Check for Business in 3D

CyberDe3ign provides the ultimate solution for achieving "security by design" through unique 3D visualisation and security verification technology.

Our DesVeSec (Design, Verify, Secure) platform captures security requirements in business process at the design stage and validate them against security standard such as ISO27001. We will help business reduce time and cost in implementation of secure information systems and provide security compliance guarantee.

With 3D modelling of both your business and security requirements, we turn security into something more than just filling forms or box-ticking exercises. It is intuitive and straightforward to adopt. In addition, the DesVeSec platform also provides one-click reporting functionality that will highlight any risks faced by your organisation.

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CYBER D3SIGN

CYPHER

CYPHER - Liverpool John Moores University
CYPHER - Interactive Cryptographic Protocol Teaching and Learning

Interactive platform of 3D game applications focused on the teaching of Cyber Security protocols to bridge the current knowledge gaps within the Cyber Security domain.

CYPHER provides teaching and training opportunities for all levels of Cyber Security students focusing upon areas of known difficulty to students such as understanding protocols, algorithms, and techniques via an intractable 3D game, and utilising game mechanics to improve engagement. The National Cyber Security Strategy (2016-2021), proposed by Government requires Cyber Security to be taught within all high-school curriculum, allows access to a vast market which is currently untapped by projects of this type, improving access and understanding for all learning styles.

Scenarios are customisable providing flexibility by the developers, as well as the target audience, to extend the application into various training fields and subjects. The intutive nature of 3D games allows students to quickly adhere to the format of scenarios, and learn through fun.

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CYPHER

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botprobe ltd

Botprobe - Anglia Ruskin University

Making Threat Big Data Manageable

BotProbe provides intelligent capture of threat data. Machine learning algorithms at the heart of BotProbe control real-time adaptive data capture, ensuring collection of only the network and application threat intelligence data that matters.

In tests, focused data capture can mean up to 97% reduction in data volumes when compared against full packet capture. This removal of superfluous non-threat data directly translates into increased SOC efficiency; analysts have the tools to detect threats earlier and minimise threat exposure, thereby protecting business assets and reputation.

Software probes allow the flexibility to extend data capture to end-devices; be it an IOT sensor, Industrial Control System device, PC, server hypervisor, switch or router. Reductions on this scale now means make it efficient to capture pre-attack forensics traffic or evidence in legal interception.

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KETS QUANTUM SECURITY

THE ULTIMATE IN SECURE COMMUNICATIONS

KETS Quantum Security - University of Bristol

Desktop Integrated Quantum Random Number Generator

KETS Quantum Security's mission is to secure communications using future-proof, scalable and easily-deployed hardware solutions powered by our game-changing quantum technologies. With an estimated 46 billion connected devices by 2021, exploding cybercrime costs, expected to hit US$2.1 trillion by 2019, has turned communications security from a 'nice to have' to a business-critical function.

With a combined 40 years' sector experience, KETS has developed a pair of hardware solution exploiting the sensitive nature of light to enable ultra-secure encryption. We exploit semiconductor fabrication to make miniaturised platforms that are fast, efficient to manufacture and can be integrated with existing electronics. We envisage our products to have applications in a wide variety of sectors including defence, telecoms, critical infrastructure and IOT.

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KETS
QUANTUM
SECURITY
THE ULTIMATE IN SECURE COMMUNICATIONS

Innovate UK

Knowledge Transfer Network

The Future. Faster.

The Knowledge Transfer Network (KTN) helps businesses get the best out of creativity, ideas and the latest discoveries, to strengthen the UK economy and improve people's lives.

As a network partner of Innovate UK, KTN links new ideas and opportunities with expertise, markets and finance through our network of businesses, universities, funders and investors. From agri-food to autonomous systems and from energy to design, KTN combines in-depth knowledge in all sectors with the ability to cross boundaries.

Connecting with KTN can lead you to potential partners, horizon-expanding events, bespoke support and innovation insights relevant to your needs.

ktn-uk.org | **@KTNUK** | **enquiries@ktn-uk.org**