Imperial College London

Fully funded (UK/EU) PhD studentship – Security and Privacy of Smartphone and IoT Systems

---

A. PROJECT DESCRIPTION

Applications are invited for UK/EU students in the Department of Computing at Imperial College London, to work in analyzing the Security and Privacy of Smartphone and IoT systems.

Why study at Imperial: Imperial College London is ranked among the top ten best universities in the world in the QS World University Rankings 2018, making an Imperial degree highly valued by employers across the globe. Moreover, academics at Imperial are conducting state of the art research allowing students to be advised and learn from the best in the field.

Location , location , location! Imperial's central London location sets you at the heart of one of the world's most exciting cities.

Why study security and privacy of Smartphone and IoT Systems: The rapid evolution of mobile devices comes at the expense of their security and their users' privacy. Numerous vulnerabilities have been demonstrated on popular smartphones while increasingly security and privacy issues are observed in smart home devices. In contrast with traditional ubiquitous computing, IoT devices use new user-interaction modalities, are more complex, and are interconnected. Thus, they introduce new attack surfaces which can result in financial, emotional and physical harm to individuals: the Mirai botnet exploited myriads of insecure IoT devices to bring down a swathe of popular online services; adversaries took advantage of vulnerable smart baby monitors to scream at babies; intelligent vehicles were remotely attacked allowing an adversary to take control of their steering, brake and transmission functions.

The successful candidate will systematically analyze the security of smartphone and IoT systems that are being used by millions of users and design secure and practical systems and protocols. The goal is to improve the security of real-world, widely used products such as the Android OS, Samsung Smartthings and the Amazon Echo among others.

Your advisor: The admitted student will be working closely with Dr. Soteris Demetriou (soterisdemetriou.com). Soteris has a PhD degree from the University of Illinois at Urbana-Champaign, USA (consistently ranked among the top 5 Computer Science programs in the USA). His work resulted in publications in top-tier security conferences, has received a distinguished paper award, incited security additions in the popular Android OS, and is recognized by awards bestowed by Samsung Research America and Hewlett-Packard Enterprise. Soteris is a recipient of the Fulbright Scholarship, and in 2017 was selected by the Heidelberg Laureate Forum as one of the 200 most promising young researchers in the fields of Mathematics and Computer Science.

Imperial College London

B. PREFERRED QUALIFICATIONS

Applicants are expected to have a First Class or Distinction Masters level degree, or equivalent, in a relevant scientific or technical discipline, such as computer science or electrical and computer engineering.

Applicants must be self-motivated and willing to work both independently and as part of a team.

Strong background in at least one of the following areas is preferred:

- Security and Privacy
- Systems
- Machine Learning
- Acoustic Signal Processing
- Formal Methods and Software Engineering

Existing research experience evident in (co-)authored scientific publications is preferred.

C. FUNDING NOTES

Further Information and Inquiries: If you are interested in this position, please contact Dr. Soteris Demetriou directly at {first letter of firstname}.{lastname}@imperial.ac.uk. Please send your CV and use "Prospective Security PhD student" as the subject line.

Location: This position will be based at the South Kensington campus in central London.

Application:

- PhD Application Requirements: http://www.imperial.ac.uk/computing/prospective-students/courses/phd/
- PhD Application Guidelines: http://www.imperial.ac.uk/computing/prospective-students/courses/phd/phd-application-guidelines/