

PhD Scholarship in Hardware and Software Co-Design for Security and Virtualization Performance

Studentship: Untaxed bursary of £17,285 per annum (2020/21 figure including London weighting plus home/EU fees)

The Department of Computing is a leading department of Computer Science among UK Universities, and has consistently been awarded the highest research rating. In the 2014 REF assessment, The Department was ranked third (1st in the Research Intensity table published by The Times Higher), and was rated as "Excellent" in the previous national assessment of teaching quality.

Applications are invited for a PhD student to analyze and co-design hardware and software support to improve the performance of trusted execution environments and virtual machines under the supervision of Lluís Vilanova (<https://www.imperial.ac.uk/people/vilanova>).

This project aims to analyze the existing system and hardware support for trusted execution environments (e.g., Intel SGX) and virtualization core technologies, in order to fundamentally improve their performance by proposing and developing new solutions that span across the hardware, operating system and application layers.

To apply for this position, you will need to have solid programming and analytical skills and a strong background in at least one of the following areas:

- Operating systems
- Computer architecture (micro-architecture and hardware-software co-design preferred)
- Machine virtualization
- Secure execution environments (e.g., Intel SGX, AMD SEV, ARM TrustZone)

Skills in any of the following areas will also be considered in addition to those described above:

- Memory design
- Encryption

This work will be performed in the LSDS lab (<https://lsds.doc.ic.ac.uk>), where you will also have the opportunity to interact with its other members and the many exciting projects we are working on.

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 mathematics. Applicants must be fluent in spoken and written English.

The position is fully funded, covering tuition fees, travel funds and a stipend/bursary. The position is available to home and EU students.

How to apply

To apply for this position, please follow the application guidelines at: <http://www.imperial.ac.uk/computing/prospective-students/courses/phd/phd-application-guidelines/>

In the application form, please write CSVP in the "Proposed Research Topic" field, and Lluís Vilanova in the "Proposed Research Supervisor" field.

Early applications are encouraged. Informal inquiries about this position are also encouraged and can be directed to Lluís Vilanova (vilanova@imperial.ac.uk).

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

Applicants are advised to visit <http://www.imperial.ac.uk/computing/prospective-students/courses/phd/> for general information on becoming a PhD student in the Department of Computing.

We are committed to equality and valuing diversity. We are also an Athena SWAN Silver Award winner, a Stonewall Diversity Champion, a Two Ticks Employer, and are working in partnership with GIRES to promote respect for trans people.