

# GEORGE PÎRLEA

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## RESEARCH INTERESTS

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Formal verification, distributed systems, cryptography, anonymity and privacy, blockchains

## EDUCATION

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**University College London** Sep 2015 - Jun 2019  
*MEng Computer Science* London, UK

- Imperative, functional and object-oriented programming paradigms (C, Haskell, Java)
- Formal logic, discrete mathematics, CS theory, research methods, networked systems
- Degree classification (current): *First-Class Honours* (81 out of 100)

**Tudor Vianu National High School of Computer Science** Sep 2011 - Jun 2015  
*High School* Bucharest, RO

- Romanian Baccalaureate: 9.81 out of 10

## RESEARCH EXPERIENCE

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**Microsoft Research Ltd** Jun-Aug 2018  
*Research intern* Cambridge, UK

- Developed FStar formalisation of the Coco enterprise blockchain framework
- Proved sequential consistency for the formal model
- Found 2 safety bugs in the Coco C++ implementation

**UCL Computer Science** Jul-Sep 2017  
*Research intern* London, UK

- Formalised and verified a parametric blockchain consensus protocol in Coq
- Joint paper with supervisor Dr Ilya Sergey accepted at CPP 2018

## PUBLICATIONS

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1. George Pîrlea and Ilya Sergey. [Mechanising Blockchain Consensus](#). In *7th ACM SIGPLAN International Conference on Certified Programs and Proofs (CPP 2018)*. Los Angeles, CA, USA, January 2018. ACM.

## SELECTED SOFTWARE PROJECTS

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**Toychain** Minimalistic blockchain consensus implemented and verified in Coq  
**BitKariero** Decentralised record of professional credentials built on Ethereum and IPFS

## TALKS AND PRESENTATIONS

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1. [Formally Verifying Coco](#) at MSR Cambridge Aug 2018 – Cambridge, UK
2. [Mechanising Blockchain Consensus](#) at MSR Cambridge Jun 2018 – Cambridge, UK
3. [Mechanising Blockchain Consensus](#) at CPP 2018 Jan 2018 – Los Angeles, USA
4. [PSYNC](#) (work by Drăgoi *et al.*) at UCL PPLV reading group Jul 2017 – London, UK
5. [Electronic voting – perhaps not a good idea?](#) at Coliberator 2015 Jun 2015 – Bucharest, RO

## ACADEMIC EVENTS ATTENDED

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<b>S-REPLS 10</b>	10th South of England Regional Programming Language Seminar
<b>CPP 2018</b>	7th ACM SIGPLAN International Conference on Certified Programs and Proofs
<b>POPL 2018</b>	45th ACM SIGPLAN Symposium on Principles of Programming Languages
<b>CoqPL 2018</b>	Fourth International Workshop on Coq for Programming Languages
<b>FMATS 5</b>	Fifth Workshop on Formal Methods and Tools for Security
<b>ICFP 2017</b>	22nd ACM SIGPLAN International Conference on Functional Programming
<b>S-REPLS 6</b>	6th South of England Regional Programming Language Seminar

## AWARDS AND SCHOLARSHIPS

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1. ACM POPL 2018 professional activities grant
2. ICFP 2017 PLMW scholarship

## TECHNICAL SKILLS

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<b>C, Python</b>	Comfortable with the language, few years experience
<b>Scala, Haskell</b>	Intermediate, can handle complex tasks with help of documentation
<b>Coq, FStar</b>	Practical experience on non-trivial project
<b>Linux</b>	Experienced, managed my own mail and file sync servers for 6 years