

Alexei Zamyatin

alexei.zamyatin@gmail.com · alexeizamyatin.me

WORK EXPERIENCE

Imperial College London

Research Assistant (Centre for Cryptocurrency Research and Engineering)

- Researched security and interoperability of distributed ledgers
- Coordinated the Blockchain.com research program
- Supervised BEng, MEng and MSc theses and group projects

London, United Kingdom

Sep 2017 – Jun 2019

Intern (Cryptocurrency Research)

- Identified queueing-related vulnerabilities in an Ethereum mining pool, derived exploits, observed real-world attacks and proposed mitigations

Jul 2016 – Sep 2016

SBA Research

Researcher (Decentralized Systems Group)

- Research security, scalability and sustainability of Proof-of-Work blockchains

Vienna, Austria

Oct 2016 – Present

Intern (IT Security)

- Highlighted centralization issues in Bitcoin, Litecoin and merge-mined cryptocurrencies
- Implemented a generic data extraction tool for Bitcoin-like blockchains

Jul 2016 – Sep 2016

Accenture

Intern (Technology Consulting)

- Developed the technical architecture and release planning concepts, and the Java prototype for the largest public sector project in Austria
- Helped develop and test the Xtext DSL for automatic code generation in public sector projects and held workshops for new junior developers

Vienna, Austria

Feb 2016 – Jun 2016

United Nations Office in Vienna

Conference Assistant (Short-term contracts)

- Conference registration and meeting support

Vienna, Austria

Oct 2012 – Jan 2017

TEACHING

Imperial College London

Teaching Assistant

- *Principles of Distributed Ledgers (CO 467)*, taught by Arthur Gervais (Spring '18, Spring '19)

London, United Kingdom

Jan 2018 - Mar 2018

Technische Universität Wien

Teaching Assistant

- *Advanced Software Engineering*, taught by Stefan Biffl (Fall '15, Summer '16, Fall '16)
- *Requirements Engineering and Specification*, taught by Paul Grünbacher (Fall '15)
- *Software Engineering and Project Management*, taught by Stefan Biffl (Fall '14, Summer '15)

Vienna, Austria

Oct 2015 - Feb 2017

EDUCATION

Imperial College London

PhD in Computer Science

- Advised by William Knottenbelt and Arthur Gervais.
- Thesis topic: “The Quest for Scalable and Trustless Cross-Chain Communication”

London, United Kingdom

Sep 2017 – Present

Technische Universität Wien

MSc Software Engineering and Internet Computing – 1.26/5.0 (1.0 best grade)

- MSc Thesis “Merged Mining: Analysis of Effects and Applications”

Vienna, Austria

Oct 2015 – Nov 2017

Technische Universität Wien

BSc Software and Information Engineering – 1.9/5.0 (1.0 best grade)

- BSc Thesis “Name-Squatting in Namecoin”

Vienna, Austria

Oct 2012 – Oct 2015

Vienna University of Economics and Business

1.94/5.0 (1.0 best grade)

- Took courses in economics and finance worth 110 ECTS credits (180 ECTS total for BSc)

Vienna, Austria

Sep 2012 – Oct 2016

Theresianische Akademie Wien

Higher School Certificate – 1.0/5.0 (1.0 best grade)

- Passed C++ course at University of Vienna during final year as part of Austria’s talent program

Vienna, Austria

Sep 2004 – Jul 2012

Secondary School at the Russian Embassy in Austria

Russian Unified State Exam (equiv. SAT)

- Took all mandatory school subjects as evening courses in Russian

Vienna, Austria

Sep 1999 – Jul 2010

AWARDS AND SCHOLARSHIPS

“ KUWI ” Research Fellowship - Technische Universität Wien	<i>Vienna, Austria</i>
Scholarship for international research projects and stays abroad	Jan 2017
Merit Scholarship - Technische Universität Wien	<i>Vienna, Austria</i>
Scholarship for outstanding academic performance	Oct 2016
High Potential Program - Technische Universität Wien	<i>Vienna, Austria</i>
Accepted into the industry-focused High Potential Program (TuTheTop)	Oct 2015 – Jun 2016
Merit Scholarship - Technische Universität Wien	<i>Vienna, Austria</i>
Scholarship for outstanding academic performance	Oct 2015

PUBLICATIONS

- [Pay-To-Win: Incentive Attacks on Proof-of-Work Cryptocurrencies](#). Aljosha Judmayer, Nicholas Stifter, **Alexei Zamyatin**, Itay Tsabary, Ittay Eyal, Peter Gazi, Sarah Meiklejohn, and Edgar Weippl. *Cryptology ePrint Archive: Report 2019/775*. 2019
- [A Deep Dive into Bitcoin Mining Pools: An Empirical Analysis of Mining Shares](#). Matteo Rommitti, Aljosha Judmayer, **Alexei Zamyatin**, and Bernhard Haselhofer. *Workshop on the Economics of Information Security (WEIS)*. 2019
- [XCLAIM: Trustless, Interoperable, Cryptocurrency-backed Assets](#). **Alexei Zamyatin**, Dominik Harz, Joshua Lind, Panayiotis Panayiotou, Arthur Gervais and William J. Knottenbelt. *IEEE Symposium on Security and Privacy (S&P)*. 2019
- [Uncle Traps: Harvesting Rewards in a Queue-based Ethereum Mining Pool](#). Sam Werner, Paul Pritz, **Alexei Zamyatin**, William J. Knottenbelt. *EAI International Conference on Performance Evaluation Methodologies and Tools (VALUETOOLS)*. 2019
- [Echoes of the Past: Recovering Blockchain Metrics From Merged Mining](#). Nicholas Stifter, Philipp Schindler, Aljosha Judmayer, **Alexei Zamyatin**, Andreas Kern, and Edgar Weippl. *International Conference on Financial Cryptography and Data Security (FC)*. 2019
- [Multisignatures for Cryptocurrency-Backed Tokens \(Poster\)](#). **Alexei Zamyatin**, Dominik Harz, Joshua Lind, Panayiotis Panayiotou, Arthur Gervais and William J. Knottenbelt. *International Workshop on Cryptocurrencies and Blockchain Technology (CBT)*. 2018
- [Committing to Quantum Resistance: A Slow Defence for Bitcoin Against a Fast Quantum Computing Attack](#). Iain Stewart, Dragos Ilie, **Alexei Zamyatin**, Sam Werner, Maryam F. Torshizi, and William J. Knottenbelt. *Royal Society open science*, 5(6), 180410. 2018
- [Flux: Revisiting Near Blocks for Proof-of-Work Blockchains](#). **Alexei Zamyatin**, Nicholas Stifter, Philipp Schindler, Edgar Weippl, and William J. Knottenbelt. *Cryptology ePrint Archive: Report 2018/415*. 2018
- [Agreement with Satoshi- On the Formalization of Nakamoto Consensus](#). Nicholas Stifter, Aljosha Judmayer, Philipp Schindler, **Alexei Zamyatin**, and Edgar Weippl. *Cryptology ePrint Archive: Report 2018/400*. 2018
- [A wild velvet fork appears! Inclusive blockchain protocol changes in practice \(Short Paper\)](#). **Alexei Zamyatin**, Nicholas Stifter, Aljosha Judmayer, Philipp Schindler, Edgar Weippl, and William J. Knottenbelt. *Workshop on Bitcoin and Blockchain Research, Financial Cryptography and Data Security*. 2018
- [Merged Mining: Curse or Cure?](#). Aljosha Judmayer, **Alexei Zamyatin**, Nicholas Stifter, Artemios G Voyiatzis, and Edgar Weippl. *In Data Privacy Management, Cryptocurrencies and Blockchain Technology*. 2017
- [Swimming with Fishes and Sharks: Beneath the Surface of Queue-based Ethereum Mining Pools](#). **Alexei Zamyatin**, Katinka Wolter, Sam Werner, Catherine E.A. Mulligan, Peter G. Harrison, and William J. Knottenbelt. *Annual Meeting of the IEEE International Symposium on Modelling, Analysis and Simulation of Computer and Telecommunication Systems*. 2017
- [Bitcoin-Cryptocurrencies and Alternative Applications](#). Aljosha Judmayer, **Alexei Zamyatin**, Nicholas Stifter, and Edgar Weippl. *ERCIM News 110, Special theme: Blockchain Engineering*. 2017

SKILLS AND CERTIFICATIONS

- Languages:** German (Native), Russian (Native), English (Fluent), French (Basic)
- Programming Skills:** Proficient in Java, Python, Javascript (AngularJS), Solidity; Experience with C and Xtext.
- Other Technical Skills:** Spring, Maven, Gradle, Docker, Vagrant, (PL/pg)SQL, JPA (Hibernate), SPARQL, Git, L^AT_EX, Excel
- Certifications:** IELTS Academic (8.5/9), 2018; European Business Competence* License (EBC*L), 2010

VOLUNTEERING & EXTRACURRICULAR ACTIVITIES

- PC member: [MARBLE](#) ('19); External reviewer: [Royal Society Open Science](#) ('19), [BPM](#) ('19), [ESORICS](#) ('17,'18,'19), [BSCT](#) ('18), [VALUETOOLS](#) ('17), [TrustBus](#) ('17)
- Organizer of the London blockchain PhD meetup (incl. Imperial, KCL, UCL, Cambridge, Surrey, Edinburgh, Queen Mary)
- Organizer of the [Chainhack::24](#) hackathon with Blockchain.com, Outlier Ventures, Ocean, Haja, Sovrin and Imperial College
- Lead the blockchain live monitoring and data collection project at Imperial College (to go live soon)
- Help maintain [P2Preview](#), a curated online bibliography of blockchain related papers

NON-ACADEMIC INTERESTS

- Tennis player (Imperial College Team / Vienna's Tennis League) and skier, recently started scuba diving
- Astronomy; Geopolitics and history