

# Andrei-Costin CONSTANTINESCU

## PERSONAL DATA

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## WORK EXPERIENCE

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- 2025 RESEARCH SCIENTIST,  
(JUN-Nov) DFINITY Foundation, Zürich, Switzerland  
• Designed protocols improving the reliability and scalability of inter-smart-contract messaging and large-state synchronization in adversarial environments.  
• Collaborated with engineers and community developers to refine protocol semantics, reduce adoption friction, and deliver clear specifications, documentation, and libraries.  
• Strengthened the Motoko smart-contract language by identifying subtle issues and gaps in key components, contributing data structures and quality-of-life enhancements, and creating high-quality Motoko training data for an LLM-based code-generation agent.  
• Blockchain systems, distributed protocols, smart-contract language tooling, developer-facing APIs.
- 2021 SOFTWARE ENGINEERING INTERN,  
(JUL-OCT) Google, Zürich, Switzerland  
• Improved the relevance and diversity of Code Search real-time generated suggestions using modern machine learning and data analysis techniques.  
• Python, C++, ranking models, training and serving, hyperparameter tuning, diversity scoring.
- 2020 SOFTWARE ENGINEERING INTERN,  
(JUL-OCT) Google, Aarhus, Denmark  
• Implemented a new backend for the Dart programming language compiler using WebAssembly. Benchmarks showed a 17% speed improvement over the previous JavaScript implementation.  
• As the first client of the experimental Garbage-Collected WebAssembly, filed bug reports and contributed to its design in the V8 Chrome engine.  
• C++, Dart, WebAssembly, code generation, control-flow structuring, object-layout lowering.
- 2019 SOFTWARE ENGINEERING INTERN,  
(JUL-SEPT) Google, Zürich, Switzerland  
• Significantly improved the Address Understanding Service's quality by building scalable infrastructure and integrating new large geographical datasets.  
• C++, Python, SQL, large-scale distributed dataflow pipelines.

## EDUCATION

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- 2021-2025 PHD STUDENT AND RESEARCH ASSISTANT,  
DISTRIBUTED COMPUTING GROUP (PROF. ROGER WATTENHOFER)  
ETH Zürich, Switzerland  
• Research in Algorithms, Computational Social Choice, Distributed Systems and Game Theory.  
• Supervising 20+ Master's and Bachelor student theses.  
• Teaching Assistant for Distributed Systems, Principles of Distributed Computing and Computational Thinking. Conducting, supervising and grading examinations.
- 2017-2021 MCompSci 4-year degree in COMPUTER SCIENCE,  
University of Oxford, Oxford, United Kingdom  
• Hoare Prize for best overall performance in Computer Science.  
• G-Research Prize for best third-year project in Computer Science.  
• Average 92.625 in Master's and 86.7 in Third-Year examinations.  
• Teaching Assistant for Principles of Programming Languages.

## TECHNICAL SKILLS

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Languages: C / C++, PYTHON, SCALA, JAVA, HASKELL, OCAML, RUST  
Systems: Fault-Tolerant Replication, Blockchain Infrastructure, Protocol Design, Database Internals  
Engineering: Compiler Implementation, Performance Optimization, Concurrency, Applied ML  
Foundations: Algorithms & DS, Game Theory, Formal Verification, Cryptographic Primitives, PL Theory

## PUBLICATIONS

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- 2025    “[Validity in Network-Agnostic Byzantine Agreement](#)” (**Highlighted Paper**),  
[Andrei Constantinescu](#), Marc Dufay, Diana Ghinea, Roger Wattenhofer  
39th International Symposium on Distributed Computing, Berlin, Germany
- “[Brief Announcement: From Few to Many Faults: Adaptive Byzantine Agreement with Optimal Communication](#),”  
[Andrei Constantinescu](#), Marc Dufay, Diana Ghinea, Roger Wattenhofer  
39th International Symposium on Distributed Computing, Berlin, Germany
- “[Transaction Fee Market Design for Parallel Execution](#),”  
Bahar Acilan, [Andrei Constantinescu](#), Lioba Heimbach, Roger Wattenhofer  
7th Conference on Advances in Financial Technologies, Pittsburgh, USA
- “[Byzantine Stable Matching](#)” (**Best Paper Award**),  
[Andrei Constantinescu](#), Marc Dufay, Diana Ghinea, Roger Wattenhofer  
44th ACM Symposium on Principles of Distributed Computing, Huatulco, Mexico
- “[Condorcet Winners and Anscombe's Paradox Under Weighted Binary Voting](#),”  
Carmel Baharav, [Andrei Constantinescu](#), Roger Wattenhofer  
24th International Conference on Autonomous Agents and Multiagent Systems, Detroit, USA
- “[Byzantine Game Theory: Sun Tzu's Boxes](#),”  
[Andrei Constantinescu](#), Roger Wattenhofer  
24th International Conference on Autonomous Agents and Multiagent Systems, Detroit, USA
- 2024    “[Convex Consensus with Asynchronous Fallback](#),”  
[Andrei Constantinescu](#), Diana Ghinea, Roger Wattenhofer and Floris Westermann  
38th International Symposium on Distributed Computing, Madrid, Spain
- “[Brief Announcement: Unifying Partial Synchrony](#),”  
[Andrei Constantinescu](#), Diana Ghinea, Jakub Sliwinski and Roger Wattenhofer  
38th International Symposium on Distributed Computing, Madrid, Spain
- “[Solving Woeginger's Hiking Problem: Wonderful Partitions in Anonymous Hedonic Games](#),”  
[Andrei Constantinescu](#), Pascal Lenzner, Rebecca Reiffenhäuser, Daniel Schmand and Giovanna Varricchio  
51st International Colloquium on Automata, Languages and Programming, Tallinn, Estonia
- “[Unravelling Expressive Delegations: Complexity and Normative Analysis](#),”  
Giannis Tyrovolas, [Andrei Constantinescu](#) and Edith Elkind  
38th AAAI Conference on Artificial Intelligence, Vancouver, Canada
- 2023    “[A Fair and Resilient Decentralized Clock Network for Transaction Ordering](#),”  
[Andrei Constantinescu](#), Diana Ghinea, Lioba Heimbach, Zilin Wang and Roger Wattenhofer  
27th International Conference on Principles of Distributed Systems, Tokyo, Japan
- “[Stable Dinner Party Seating Arrangements](#)” (**Best Paper Award**),  
Damien Berriaud, [Andrei Constantinescu](#) and Roger Wattenhofer  
19th Conference on Web and Internet Economics, Shanghai, China
- “[Recovering Single-Crossing Preferences From Approval Ballots](#),”  
[Andrei Constantinescu](#) and Roger Wattenhofer  
19th Conference on Web and Internet Economics, Shanghai, China
- “[Computing the Best Policy That Survives a Vote](#),”  
[Andrei Constantinescu](#) and Roger Wattenhofer  
22nd International Conference on Autonomous Agents and Multiagent Systems, London, UK
- 2022    “[Voting in Two-Crossing Elections](#),”  
[Andrei Constantinescu](#) and Roger Wattenhofer  
31st International Joint Conference on Artificial Intelligence, Vienna, Austria
- 2021    “[Proportional Representation under Single-Crossing Preferences Revisited](#),”  
[Andrei Constantinescu](#) and Edith Elkind  
35th AAAI Conference on Artificial Intelligence, Virtual

## GRANTS

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- 2024    “[TRANSACTION FEE MARKET DESIGN FOR PARALLEL EXECUTION](#)” (\$30,000),  
RESEARCH GRANT (CO-PI LIoba Heimbach)  
[Ethereum Foundation](#), Robust Incentives Group

## **SELECTED SCIENTIFIC SERVICE**

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### **PROGRAM COMMITTEE MEMBER AND REVIEWER:**

- 2025 AAAI, Distributed Computing  
2024 IJCAI, AAAI, AAMAS, TCS

### **PRESIDENT OF SCIENTIFIC COMMITTEE:**

- 2023 Junior Balkan Olympiad in Informatics  
2020–2021, 2024 Romanian Master of Informatics (International Contest)

### **SCIENTIFIC COMMITTEE MEMBER:**

- 2022–2023 Junior Balkan Olympiad in Informatics  
2021 ICPC Southeastern Europe Regional Contest  
2021 European Junior Olympiad in Informatics  
2018 Balkan Olympiad in Informatics  
2017, 2019–2023 Romanian Master of Informatics (International Contest)

## **SELECTED COMPETITIVE PROGRAMMING HONORS**

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2018	23 <sup>rd</sup> place	Google Hash Code Finals, Dublin, Ireland
	31 <sup>st</sup> place	ACM ICPC World Finals, Beijing, China
	Gold Medal	ACM ICPC NWERC, Bath, United Kingdom
2017	Bronze Medal	International Olympiad in Informatics, Tehran, Iran
	Silver Medal	Central European Olympiad in Informatics, Ljubljana, Slovenia
	Gold Medal	National Olympiad in Informatics, Brasov, Romania
2016	Gold Medal	International Tournament in Informatics “John Atanasoff,” Shumen, Bulgaria
	Silver Medal	International Olympiad in Informatics, Kazan, Russian Federation
	Gold Medal	Balkan Olympiad in Informatics, Nicosia, Cyprus
“Mihai Patrascu”		Award for Romania’s year’s most prolific competitor
	1 <sup>st</sup> place	National Training and IOI Selection Camps, Focsani and Magurele, Romania
	1 <sup>st</sup> place	National Olympiad in Informatics, Craiova, Romania
2015	Gold Medal	National Olympiad in Informatics, Targoviste, Romania
2013	Gold Medal	International Tournament in Informatics “John Atanasoff,” Shumen, Bulgaria

## **LANGUAGES**

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- Fluent: English, Romanian  
Basic: German, French, Turkish