

Andrei-Costin CONSTANTINESCU

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WORK EXPERIENCE

- 2025 RESEARCH SCIENTIST,
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,
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,
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,
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

- 2021–2025 PHD STUDENT AND RESEARCH ASSISTANT,
DISTRIBUTED COMPUTING GROUP (PROF. ROGER WATTENHOFER)
ETH Zürich, Zürich, Switzerland – Defense pending
- Research in Algorithms, Computational Social Choice, Distributed Systems and Game Theory.
 - Supervising 20+ Master's and Bachelor's theses and projects.
 - TA for Distributed Systems, Principles of Distributed Computing and Computational Thinking.
- 2017–2021 MCompSci 4-year degree in COMPUTER SCIENCE,
University of Oxford, Oxford, United Kingdom
- Hoare Prize (best Master's performance), G-Research Prize (best Bachelor's project).
 - Grade: 92.6 (Master's), 84.3 (Bachelor's).

TECHNICAL SKILLS

- Programming: 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

LANGUAGES

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

PUBLICATIONS

2025	DISC	"Validity in Network-Agnostic Byzantine Agreement" (Highlighted Paper),
	DISC	"BA: From Few to Many Faults: Adaptive Byzantine Agreement with Optimal Communication,"
	AFT	"Transaction Fee Market Design for Parallel Execution,"
	PODC	"Byzantine Stable Matching" (Best Paper Award),
	AAMAS	"Condorcet Winners and Anscombe's Paradox Under Weighted Binary Voting,"
	AAMAS	"Byzantine Game Theory: Sun Tzu's Boxes,"
2024	DISC	"Convex Consensus with Asynchronous Fallback,"
	DISC	"BA: Unifying Partial Synchrony,"
	ICALP	"Solving Woeginger's Hiking Problem: Wonderful Partitions in Anonymous Hedonic Games,"
	AAAI	"Unravelling Expressive Delegations: Complexity and Normative Analysis,"
2023	OPODIS	"A Fair and Resilient Decentralized Clock Network for Transaction Ordering,"
	WINE	"Stable Dinner Party Seating Arrangements" (Best Paper Award),
	WINE	"Recovering Single-Crossing Preferences From Approval Ballots,"
	AAMAS	"Computing the Best Policy That Survives a Vote,"
2022	IJCAI	"Voting in Two-Crossing Elections,"
2021	AAAI	"Proportional Representation under Single-Crossing Preferences Revisited"

LEADERSHIP & PROFESSIONAL SERVICE

RESEARCH FUNDING:

- 2024 "Transaction Fee Market Design for Parallel Execution" (\$30,000)
Ethereum Foundation, Robust Incentives Group (co-PI Lioba Heimbach)

PROGRAM COMMITTEE MEMBER / REVIEWER:

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

SCIENTIFIC COMMITTEE CHAIR:

- 2023 Junior Balkan Olympiad in Informatics (JBOI)
2020–2021, 2024 Romanian Master of Informatics (RMI, international contest)

SCIENTIFIC COMMITTEE MEMBER:

- 2022–2023 Junior Balkan Olympiad in Informatics (JBOI)
2021 ACM ICPC SEERC
2021 European Junior Olympiad in Informatics (EJOI)
2018 Balkan Olympiad in Informatics (BOI)
2017, 2019–2024 Romanian Master of Informatics (RMI, international contest)

COMPETITIVE PROGRAMMING HONORS

INTERNATIONAL:

International Olympiad in Informatics (IOI)	Silver (2016), Bronze (2017)
ACM ICPC	31st place (WF 2018), Gold (NWERC 2018)
Google Hash Code Finals	23rd place (2018)
Balkan Olympiad in Informatics (BOI)	Gold (2016)
Central European Olympiad in Informatics (CEOI)	Silver (2017)
International Advanced Tournament in Informatics (IATI)	Gold (2016, 2013), Bronze (2015)

NATIONAL (ROMANIA):

- National Olympiad in Informatics 1st place (2016), Gold (2015–2017), Silver (2014, 2011)
National Training and IOI Selection Camps 1st place and "Mihai Patrascu" Award (2016)