

ULYSSE PAVLOFF

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EDUCATION

PhD in Computer Science

CEA

2021 – 2024

Saclay, FR

PhD focused on "Game-Theoretic Analysis of Blockchain Robustness".

Master's Degree in Game Theory and Artificial Intelligence

Sorbonne University, Paris VI

2019 – 2021

Paris, FR

Master's degree with coursework in Distributed Agents, Robotics, Operational Research, and Interactions and Decision (ANDROIDE).

Bachelor's degrees in Mathematics and Computer Science

Sorbonne University, Paris VI

2016 – 2019

Paris, FR

Selective DIIM Curriculum (Double Intensive Computer Science and Mathematics).

TECHNICAL SKILLS

Java C Python SQL Solidity JavaScript HTML
CSS C++ C# Git Matlab LaTeX

EXPERIENCE

Blockchain & ZK Posts

Node Guardians

2022 – 2023

Île-de-France, FR

Authored in-depth content on the construction and verification of zk-SNARKs, providing clear explanations of pseudo-randomness principles within blockchain systems.

Teaching

Ph.D. program

2022 – 2023

Île-de-France, FR

Delivered lectures on Ethereum consensus mechanisms and Solidity programming language to undergraduate and graduate students at *École Polytechnique*, *HEC*, and *ENSIIE*, enhancing their understanding of blockchain technologies.

Academic Research

LAMSADE

2021

Paris, FR

Developed and applied Monte Carlo Tree Search algorithms to analyze and quantify the price of anarchy in voting systems, leading to the production of a scientific paper. Work supervised by J. Lang and T. Cazenave.

Data Scientist

WISTER

2019

Paris, FR

Leveraged deep learning models to optimize ad selection, significantly improving user engagement and increasing ad revenue yields by automating model updates.

LANGUAGES

English: Fluent

C1

French: Native

C2

German: Student Level

B2

SCIENTIFIC PAPERS

- Pavloff, U., Amoussou-Guenou, Y., & Tucci-Piergiovanni, S. (2024). **Incentive Compatibility of Ethereum's PoS Consensus Protocol**. 28th International Conference on Principles of Distributed Systems, OPODIS 2024.
- Pavloff, U., Amoussou-Guenou, Y., & Tucci-Piergiovanni, S. (2024). **Byzantine Attacks Exploiting Penalties in Ethereum PoS**. In 54th Annual IEEE/IFIP International Conference on Dependable Systems and Networks, DSN 2024, Brisbane, QSL, Australia.
- Pavloff, U., Amoussou-Guenou, Y., & Tucci-Piergiovanni, S. (2023, March). **Ethereum Proof-of-Stake under Scrutiny**. In Proceedings of the 38th ACM/SIGAPP Symposium on Applied Computing (pp. 212-221).
- Attiya, H., Del Pozzo, A., Milani, A., Pavloff, U., & Rapetti, A. (2023). **The Synchronization Power of Auditable Registers**. 27th International Conference on Principles of Distributed Systems, OPODIS 2023.
- Pavloff, U., Cazenave, T., & Lang, J. (2022). **Sequential Elimination Voting Games**. arXiv preprint.

PROJECTS

HCI Research Experiment

- Implementation of a web application to make a statistical analysis of a cognitive bias within the framework of a project on Human-Computer Interaction. Supervised by G. Bailly.

Data Challenge SFDS 2018

- Forecasted electricity consumption using mathematical models (ARMA) and machine learning techniques. Supervised by T. Touati.

Miscellaneous ML Projects

- Handwritten digit recognition using deep learning, based on Michael Nielsen's book.
- Artificial Intelligence opponent at Connect4 and Checkers.
- Simulated behavioral specialization in embodied evolutionary robotics, based on a scientific paper.

Games

- Creation of what'sUrvivor, a game with challenges every week. Implementation of challenges and several games in Javascript.
- Implementation of a game in C# using Unity with educational purposes.
- Adaptive mobile game in C#.
- Remade and improved an old game called *Lemmings* in Java.

Booking Website

- Designed and developed a booking website from scratch, increasing renting visibility and accessibility.