# ULYSSE PAVLOFF

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## EDUCATION

### PhD in Computer Science
2021 – 2024
**CEA** — Saclay, FR

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

### Master's Degree in Game Theory and Artificial Intelligence
2019 – 2021
**Sorbonne University, Paris VI** — 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
2016 – 2019
**Sorbonne University, Paris VI** — 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
2022 – 2023
**Node Guardians** — 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
2022 – 2023
**Ph.D. program** — 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
2021
**LAMSADE** — 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
2019
**WISTER** — 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 whatsUrvivor, 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.