Jonas Pauli

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PROFILE

I am an experienced, self-taught and highly driven Software Engineer on a continuous learning journey.

I am specialized in Rust development, Cryptography and Distributed Systems and have professional Research experience.

Much of my work is displayed on my website https://jonas.software and GitHub @jonas089.

RESEARCH FOCUS

- Distributed Systems
- Rust Systems Engineering
- Applied Cryptography
- Zero Knowledge Proof Systems and VMs
- Blockchain Scaling Solutions

EDUCATION AND CERTIFICATIONS

Hull's School
2019 – 2022
International A-Level in Mathematics and Physics.

Certifications
Cambridge Proficiency of English (C2)
Udemy: Cryptography and Hashing fundamentals
Udemy: Rest APIs with Python and Flask
Udemy: Ultimate Rust Crash Course

WORK EXPERIENCE

R&D Engineer
Casper Association
(September 2022 – now)

- Member of a core team responsible for research and development of blockchain scaling solutions, leveraging zero knowledge proof systems and collaborating with novel cryptography start-ups.
- Responsible for delivery of proof of concept applications and services, including a full-stack React application that was shared with hundreds of High School students in the U.S. during a tech-talk series in collaboration with "Virtual Enterprises International" - an educational entity based in New York.
- Contributed to the open source Cryptography and Blockchain ecosystem, publishing innovative codebases on Github and authoring research articles on Medium.
- Composed documentation for complex products, libraries and crates, targeting developers with diverse backgrounds whilst focusing on practical examples and usability / reproducibility.

R&D Assistant
Casper Association
(July 2022 – September 2022)

- Successfully recruited for a professional role during my tenure at a British High School in Zurich, demonstrating early career initiative and capability.
- Achieved an International Advanced Level (IAL) qualification in Mathematics and Physics, showcasing strong analytical and problem-solving skills.
- Opted for a specialized career path in Systems Development and Cryptography, prioritizing hands-on technical expertise and practical application over a conventional Computer Science degree. This decision reflects my commitment to deepening core programming skills and aligning with industry-specific needs.

PROJECTS AND OPEN SOURCE CONTRIBUTIONS

PARADOX-6: Rust system that supports multiple zero knowledge proving backends.
CASPER-CIRCOM: Host-function verifier for Circom zero knowledge proofs, built into the Casper Node.
ECDSA-INPUT-LIB: Library used to generate inputs for zero knowledge circuits that utilize elliptic curve digital signatures (ECDSA, SECP256k1)

INPIGRITAS: An experimental Python transaction system without consensus that I developed during my tenure at High School.

ROLLUP-RAPTOR AND THYLA-TREES: Proof of concept Noir circuit with Merkle Tree & Trie implementations for a conceptual transaction rollup system.