Daniil Krizhanovskyi

Distributed Systems, Cryptography, and Applied Mathematics Engineer

Zurich, Switzerland
+41 79 915 45 30
daniil.krizhanovskyi@hotmail.com
dkrizhanovskyi

Summary

Experienced engineer with over 4 years of expertise in distributed systems and applied cryptography. Specializing in low-level programming in **Rust**, **C**, and **C++**, I develop scalable and high-performance solutions for mission-critical systems. Proven track record in the development and implementation of cryptographic protocols for blockchain networks and post-quantum cryptography. Passionate about applying my knowledge and skills to solve complex problems in system security and optimization.

Professional Experience

Aug 2023 – Apr 2024 **Applied Cryptography Engineer**, *SecureTech Solutions GmbH*, Remote, Austria
- Developed cryptographic protocols for securing financial transactions in distributed systems, increasing operational security by 30%.
- Integrated post-quantum algorithms, ensuring systems' resilience to modern cryptographic attacks.
- Optimized cryptographic modules in C and C++ for blockchain networks, improving performance by 25%.
- Conducted security testing and verification using advanced methods.
- Ensured compliance with GDPR and data security requirements.

Jul 2022 – Jul 2023 **Middle Rust Engineer**, *NextGen Technologies*, Remote, Rome, Italy
- Developed key components of distributed systems, enabling over 1 million requests per second.
- Optimized critical modules in C and C++, enhancing speed by 20%.
- Implemented efficient solutions for blockchain applications, reducing processing delays by 15%.

Jan 2022 – Jun 2022 **Rust Backend Developer**, *InnovateTech Italy*, Hybrid, Milan, Italy
- Applied low-level optimizations in C and C++ to a microservices architecture, improving system efficiency by 18%.
- Migrated legacy systems to Rust, enhancing application stability and security.

Jan 2021 – Dec 2021 **Rust Developer**, *TechSolutions UA*, Hybrid, Kyiv, Ukraine
- Developed high-performance systems in Rust and C++ for various clients, increasing their performance by 22%.
- Provided consultancy on integrating cryptographic protocols in distributed systems, improving product security.

Oct 2019 – Dec 2020 **Junior Rust Developer**, *TechSolutions UA*, On-site, Kyiv, Ukraine
- Developed high-performance web servers in Rust for handling high request loads.
- Optimized asynchronous operations using Tokio and Actix, improving real-time network request handling by 15%.
- Implemented algorithms for data flow and resource management in microservice architecture.
- Contributed to the development of RESTful APIs for enterprise solutions, ensuring secure and stable data exchange.
- Developed and maintained logging and monitoring systems, enhancing server reliability.

Education

2020 – 2022 **Master's in Applied Mathematics**, *Lviv Polytechnic National University*, Lviv, Ukraine
- **Thesis**: Mathematical Modeling of Cryptographic Protocols for Distributed Systems.

2019 – 2020 **Master's in Information Systems and Technologies**, *Odessa National Polytechnic University*, Odessa, Ukraine
- **Thesis**: Implementation of Post-Quantum Cryptography in Data Management Systems.

2016 – 2019 **Bachelor's in Computer Engineering**, *Odessa National Polytechnic University*, Odessa, Ukraine
- **Project**: Optimization of Conveyor Production Using C.

Skills

Programming Languages Rust (90%), C++ (85%), C (80%), Python (85%), Java (80%), MATLAB (70%)

Projects

Quantum Cryptographic Toolkit Developed tools for post-quantum cryptography and integrated them into distributed systems, improving overall security by 40%.

Optimization of Distributed Consensus Protocols Researched and optimized consensus protocols, enhancing the scalability of distributed systems by 25%.

High-Performance Systems in Industrial Pipelines Optimized industrial conveyor production processes based on C and C++, increasing efficiency by 30%.

Research Interests

Areas of Interest Distributed Systems and Blockchain Security, Cryptography and Post-Quantum Cryptography, High-Performance Computing in Cryptography and Industrial Applications, C and C++ Optimization for Low-Level System Performance, Consensus Mechanisms in Decentralized Networks.

Publications

2023 Krizhanovskyi D. "Mathematical Modeling of Consensus Protocols for Distributed Systems". SSRN.

2023 Krizhanovskyi D. "Comparative Analysis of Post-Quantum Cryptographic Algorithms for Distributed Systems". viXra.