

# Maykon Giovani, Quantum Computing - Systems Engineer

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## LINKS

[Portfolio](#), [LinkedIn](#)

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## PROFILE

Accomplished Quantum Computing Systems Engineer with over 15 years of experience in software engineering and cybersecurity. Expertise includes developing distributed systems and implementing advanced cryptographic protocols, ensuring high-performance and secure applications. Proven ability to lead cross-functional teams and manage complex projects, consistently delivering tailored software solutions that meet client specifications. Strong background in formal methods and quantum cryptography, with a focus on enhancing security measures and optimizing resource utilization. Committed to continuous learning and staying abreast of emerging technologies in the field.

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## EMPLOYMENT HISTORY

Jan 2022 — Present

### Software Engineer Technical Lead, Stinging

Rjukan, Vestfold og  
Telemark, Norway

Focused on the design and implementation of distributed systems and secure applications, utilizing advanced programming languages and technologies.

- Engineered distributed systems and multi-threaded applications with Rust and C++, optimizing resource use and ensuring smooth operation.
- Implemented cryptographic algorithms to develop secure decentralized applications, including various blockchain protocols like zk protocols.
- Utilized web development frameworks such as React, React Native, and NestJS to create scalable and user-friendly web applications.
- Emphasized cybersecurity by incorporating stringent security measures to protect sensitive information and maintain data integrity.
- Led project management efforts and worked with diverse teams, applying agile methodologies to meet deadlines and stay within budget.

May 2022 — Jun 2025

### Lead Senior Formal Methods Engineer (Quantum Cryptography & IIoT), Draper

Cambridge,  
Massachusetts, United  
States

Oversaw the development of secure quantum cryptography protocols and IIoT systems, integrating formal methods and functional programming techniques.

- Defined formal semantics for CRYSTALS-Kyber and Falcon using a Haskell DSL, compiling to ``no_std`` Rust.
- Proved IND-CCA2 resistance and unforgeability with Isabelle/HOL, embedding proofs directly into the build process.
- Developed OCaml compiler passes to translate protocol specifications into optimized ``no_std`` Rust crates, ensuring type and memory safety.
- Created a verification framework utilizing SMT/SAT solvers and SPIN/TLA+ for validating CoAP/MQTT protocol state machines.
- Integrated formally verified cryptographic modules into ARM Cortex-M microcontrollers, achieving over 1 Mb/s throughput.

Jan 2022 — Sep 2022

### Senior Software Engineer Technical Lead, Olympos Labs

Hybrid

Oversaw software engineering and product strategy, focusing on technology integration and team management.

- Defined and prioritized the product roadmap alongside executive leadership.
- Managed an engineering team and coordinated with development partners for API integration.
- Applied software development best practices, including agile methodologies, automated testing, CI/CD, and code reviews.
- Created monitoring systems for platform performance and user engagement metrics.
- Explored and integrated new technologies such as blockchain, machine learning, and natural language processing.

Jul 2015 — May 2022

Research And Development Engineer, University of Oslo (UiO)

Oslo, Norway

Focused on experimental design and analysis of quantum systems in various projects.

- Directed projects aimed at creating experimental setups to investigate quantum phenomena, resulting in significant findings in quantum mechanics.
- Formulated and tested mathematical models, applying data analysis methods to gain insights into quantum systems.
- Managed cross-functional teams in quantum computing initiatives, setting project timelines and optimizing resource allocation for efficient execution.
- Instructed courses on Quantum Computing and Mechanics, creating detailed syllabi and delivering lectures to enhance student understanding.
- Engaged with international research institutions to collaborate on advanced quantum computing projects, integrating diverse methodologies and practices.

Jul 2015 — Jul 2016

Full Stack Engineer, Grupo Educacional INEPE

Served as a Full Stack Engineer focusing on software development and maintenance using the MEAN stack, IONIC framework, and Odoo ERP.

- Developed and maintained software applications, enhancing functionality using the MEAN stack and IONIC framework.
- Engineered systems for managing student data, course operations, and integrating with the Odoo ERP platform.
- Designed a user-friendly e-learning application, facilitating mobile access for students and educators.
- Provided access to course materials, assignment submissions, and communication tools through the mobile app.
- Guided cross-functional teams in shaping product strategies and offered technical support.
- Mentored junior developers and created detailed technical documentation to support ongoing development efforts.

Jan 2011 — Jul 2015

IT and Operations Director, D3S

On-site

Oversaw IT services and operational strategies to enhance business functions and service delivery.

- Managed IT services and infrastructure, including tracking devices and servers, to ensure seamless business operations.
- Directed teams in developing strategic action plans and monitored the effectiveness of service delivery.
- Created and executed IT solutions that aligned with the organization's specific requirements, employing expertise in various technical domains.
- Advised senior management on IT strategy, maintaining a focus on service security and the adoption of new technologies to improve products and services.

Jan 2008 — Feb 2009

Java Software Developer, Hot Zone Safety Group

On-site

Focused on software development with an emphasis on network functionalities and security enhancements.

- Engineered software systems that prioritized network functions, optimizing code for improved application performance.
- Incorporated advanced security measures to guard against threats, ensuring the protection of data and network integrity.
- Provided technical guidance on network and security issues during collaboration with various teams, aiding in product development and roadmap creation.
- Enhanced application scalability by optimizing code and implementing network features, preparing solutions for future workload demands.

Jan 2005 — Dec 2007

Information Technology Security Analyst, Doom Solutions LLC

On-site

Focused on designing and implementing robust security systems in line with industry standards and best practices.

- Engineered and deployed security systems utilizing intrusion detection, firewalls, and VPN technology to protect organizational data.
- Formulated and established security policies and procedures for multiple businesses, enhancing their security framework.
- Conducted regular security evaluations to pinpoint vulnerabilities and offered actionable recommendations for enhancing security measures.
- Created and facilitated security awareness training for staff, improving organizational knowledge of security protocols.
- Gained extensive knowledge in network security and intrusion detection, leading to the successful implementation of tailored security controls.

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## EDUCATION

Jan 2016 — Jan 2018	Master of Science - MS in Quantum Technology, The Faculty of Mathematics and Natural Sciences
Jan 2016 — Jan 2018	Quantum Cryptography in Computer Science, Caltech
Jan 2016 — Jan 2016	Data Science and Engineering with Apache Spark in Data Analysis & Statistics, University of California, Berkeley
Jan 2011 — Jan 2015	Bachelor of Applied Science - BASc in Physics and Computer Sciences, Federal University of Rio Grande do Sul

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## SKILLS

Security Systems Design.	Data Analysis
IT Strategy	Quantum Cryptography
Technical Documentation	Formal Methods
Cross-Functional Collaboration	Agile Methodologies
Natural Language Processing	Project Management
Machine Learning	Cryptographic Protocols
Blockchain	Distributed Systems
OCaml)	Cybersecurity
Haskell	Software Development
C++	Systems Engineering
Programming (Rust	Quantum Computing
Team Leadership	

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## LANGUAGES

Norwegian	Very good command	Spanish	Highly proficient
English	Highly proficient	Portuguese	Native speaker