Eliã Rafael de Lima Batista

77-992-5544 | o.elia.batista@gmail.com | linkedin.com/in/e-batista | elbatista.github.io

6963 Pregassona, Ticino, Switzerland
Valid Swiss Work Permit | Available to relocate or commute

Education

University of Lugano (USI)	Lugano, Switzerland
PhD in Informatics	*2021 – Feb 2026*
PUC-RS	Porto Alegre, Brazil
MSc in Computer Science	*2018 – 2020*
PUC-RS	Porto Alegre, Brazil
BSc in Computer Science	*2006 – 2011*

Professional Summary

Systems architect and software engineer with over 15 years of experience in designing, developing, and optimizing distributed and fault-tolerant systems. Expertise in **Java, Go, Python, C**, and distributed system frameworks. Skilled in blockchain technologies, consensus algorithms, and secure high-performance computing. Proven ability to lead architectural design, technical decision-making, and system implementation for complex financial and experimental systems.

Professional Experience

Researcher and Teaching Assistant   2021 – Present
University of Lugano (USI)   *Lugano, Switzerland*
  - Lead the design and development of fault-tolerant distributed systems, including SMR and atomic multicast frameworks, using **Java, Go, Python, and C**.
  - Implemented blockchain-related research prototypes, focusing on consensus, reliability, and performance.
  - Administered and optimized Linux clusters for high-performance and secure experiments.
  - Provided architectural guidance and code review for experimental distributed system components.
  - Teaching assistant for Operating Systems, Distributed Algorithms, and Systems Programming courses.

Senior Software Developer   2017 – 2020
Compasso UOL   *Brazil, RS*
  - Led full-stack and backend architecture for enterprise applications, ensuring scalability, security, and reliability.
  - Contributed to technical decision-making, system design, and CI/CD pipelines.
  - Mentored developers and collaborated on architecture discussions to align on high-quality solutions.

System Analyst   2014 – 2017
Bem Promotora   *Brazil, RS*
  - Developed financial ERP modules and backend systems with a focus on stability, security, and compliance.
  - Analyzed complex system requirements and translated them into technical designs and processes.

Software Developer   2010 – 2013
DBServer   *Brazil, RS*
  - Built ERP backend modules and optimized SQL Server workflows to ensure performance and consistency.

Software Developer   2008 – 2010
Vensis   *Brazil, RS*
  - Developed and maintained ERP and backend solutions using Microsoft technologies, focusing on robust design and maintainability.

Academic Publications

Michele Cattaneo; Eliã Batista; Fernando Pedone. **B+AVL trees: towards data structures for robust and efficient blockchain state synchronization**. Proceedings of the 44th International Symposium on Reliable Distributed Systems, 2025.

Eliã Batista; Paulo Coelho; Eduardo Alchieri; Fernando Dotti; Fernando Pedone. **FlexCast: Genuine Overlay-based Atomic Multicast**. Proceedings of the 24th International Middleware Conference, 2023.

Eliã Batista; Eduardo Alchieri; Fernando Dotti; Fernando Pedone. **Early Scheduling on Steroids: Boosting Parallel State Machine Replication**. Journal of Parallel and Distributed Computing, 2022.

Eliã Batista; Eduardo Alchieri; Fernando Dotti; Fernando Pedone. **Resource Utilization Analysis of Early Scheduling in Parallel State Machine Replication**. Proceedings of the 9th Latin-American Symposium on Dependable Computing, 2019.

Skills

Languages: English (fluent), Italian (intermediate), Portuguese (native)

Programming: Java, Go, Python, C, Visual Basic

Distributed Systems: Consensus, Paxos, SMR, Atomic Multicast, Blockchain architecture

DevOps/Tools: Git, Maven, Gradle, REST APIs, Linux administration

Blockchain & Security: Cryptography, secure distributed protocols, fault tolerance, state management, authenticated data structures

Frameworks: ReactJS, Node.js, Next.js