ELIÃ RAFAEL DE LIMA BATISTA

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

PhD Candidate in Informatics, Distributed Systems Researcher

6963 Pregassona, TI, Switzerland

EDUCATION

Università della Svizzera italiana (USI)	Lugano, Switzerland
PhD in Informatics, Distributed Systems	*2021 – Feb 2026*
PUC-RS	Brazil
MSc in Computer Science	*2018 – 2020*
PUC-RS	Brazil
BSc in Computer Science	*2006 – 2011*

PROFESSIONAL SUMMARY

Distributed systems researcher and software engineer with **10+ years** of experience designing scalable, fault-tolerant architectures and high-performance software. Focused on **incremental computation, real-time performance, and distributed state management**. Experienced in implementing **distributed middleware, SMR, and consensus protocols**, bridging cutting-edge research with practical enterprise deployments. Skilled in **Java, Go, Python, C**, and cluster management in Linux environments. Passionate about integrating **knowledge graphs, AI agents, and LLMs** for real-time, adaptive decision-making systems.

PROFESSIONAL EXPERIENCE

Research and Development   2021 – Feb 2026
University of Lugano (USI)   *Lugano, Switzerland*

- Designed and implemented **distributed fault-tolerant systems** supporting high-throughput, low-latency operations on dynamic datasets.
- Developed core **State Machine Replication (SMR)** and **Atomic Multicast** components with incremental state management.
- Optimized distributed middleware for **real-time performance and iterative processing**.
- Administered a **Linux cluster** supporting experimental deployments of scalable distributed algorithms.
- Authored papers in top conferences and journals on distributed state management, fault tolerance, and parallel SMR.
- Teaching assistant for **Operating Systems, Systems Programming, and Distributed Algorithms**.

Senior Software Developer   2017 – 2020
Compasso UOL   *Brazil, RS*

- Led development of **scalable full-stack applications** and backend services for enterprise clients.
- Implemented RESTful APIs for dynamic data access and optimized data pipelines for performance and reliability.
- Mentored junior developers on software architecture and distributed application design.

System Analyst   2014 – 2017
Bem Promotora   *Brazil, RS*

- Analyzed and optimized ERP modules, implementing **efficient data processing pipelines** with SQL Server.
- Documented and communicated requirements, ensuring alignment with business rules and regulatory constraints.

Software Developer 2010 − 2013

DBServer *Brazil, RS*

- Developed and customized ERP modules using **Microsoft technologies** tailored for a major fuel retail network in Brazil, improving operational efficiency and sales tracking
- Integrated and managed backend logic with **SQL Server** for efficient data storage and retrieval

Software Developer 2008 − 2010

Vensis *Brazil, RS*

- Built and maintained general-purpose ERP modules with **Microsoft technologies**, adaptable for various enterprise environments
- Optimized **SQL Server** queries and stored procedures to boost system performance and data consistency

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***. Latin-American Symposium on Dependable Computing, 2019.

Skills

Programming: Java, Go, Python, C, Visual Basic, JavaScript
Frameworks & Methodologies: React, Node.js, Next.js, Agile/SCRUM
Developer Tools: Git, Maven, Gradle, REST APIs, Linux Cluster Administration
Databases & Storage: SQL Server, PostgreSQL, MongoDB, Firebase DB, Graph Databases (Neo4j)
Distributed Systems: State Machine Replication, Consensus, Paxos, Atomic Multicast, Incremental Computation, Fault-Tolerant Middleware
AI & Knowledge Systems: Knowledge Graphs, LLM Integration, Retrieval-Augmented Generation (RAG), Real-Time Reasoning
Languages: English (fluent), Italian (intermediate), Portuguese (native)