Gabriel de Aragão Aleksandravicius

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Technologies

Languages: JavaScript, TypeScript, C/C++, PHP, Go, SQL, Python, HTML5/CSS3

Technologies: Node.js, ReactJS, VueJS, Next.js, Tailwind CSS, PostgreSQL, MongoDB, LangChain, Redis, WebSockets, MQTT, Express.js

Tools: Linux, Docker, Git, Keycloak, Gitlab CI, GitHub Actions

Practices: Domain-Driven Design (DDD), Test-Driven Development, CI/CD, Agile, REST API Design, Microservices, Event-Driven Architecture

Experience

Sentosa Technology Consultants April 2024 – Present
Full Stack Software Engineer / Embedded Software Engineer Remote (Bern, CH)

- **CMMC Compliance Automation Platform (AI-Powered)**
  - Backend developer responsible for architectural design and system integration.
  - Built a robust RESTful API using Node.js and TypeScript to support frontend workflows.
  - Designed a normalized PostgreSQL schema ensuring consistency and scalability.
  - Integrated Keycloak for authentication and CASL for role-based access control.
  - Developed and maintained inter-service communication with the AI engine via secure webhooks and external API triggers.
- **LLM-Based Chatbots**: Built LLM-powered chatbots using LangChain, with audio transcription and speaker diarization capabilities.
- **STAMP Protocol Latency Testing Platform**: Designed a web app and backend services using socket programming for STAMP packet generation, transmission, and precise timing.

CERN Jan 2021 – Mar 2024
Full Stack Software Developer Geneva, CH

- Developed and maintained Glance, the ATLAS collaboration's management system for personnel, speaker selection, and publication workflows.
- Built REST APIs in PHP with Domain-Driven Design to support VueJS frontends; modernized legacy code through incremental refactoring.
- Led integration of ATLAS member registration with CERN HR API, automating workflows and saving up to 1 hour daily for the Secretariat.
- Automated dynamic synchronization between Glance and CERN HR databases, reducing manual work by 30 minutes daily.
- Dockerized Glance database for consistent local development; introduced ephemeral databases and Liquibase migrations in GitLab CI/CD to enhance testing and deployment.
- Contributed to the design and development of the Activities Management and SCAB Nominations systems.

UFRJ Aerospace Research Group Sep 2019 – Dec 2021
Avionics Engineer / Manager Rio de Janeiro, Brazil

- Led a team of 4 in developing a PC/104 flight computer for data acquisition, telemetry, and parachute deployment, using Altium Designer for hardware and embedded C/C++ for software.
- Avionics system deployed in the 2023 Latin American Space Challenge: 1st place in the 3 km Solid Motors category; 2nd place in 2020 in both Solid Motors and Hybrid/Liquid categories.

Education

Haute École Arc (HE-Arc) - Neuchâtel Sep 2025 (ongoing)
- Bachelor of Science in Computer Science, Major in Embedded Software

University of Rio de Janeiro Mar 2018 – Dec 2021 (discontinued)
- Bachelor: Bionanotechnology

Languages

English/Portuguese (C2), French (C1), German (A1)

Publications

Enhancing data consistency in ATLAS and CERN HR databases through automated synchronization May 2023

Gabriel de Aragão Aleksandravicius et al.

https://doi.org/10.1051/epjconf/202429505004

Additional Information

- **CHEP 2023** (Norfolk, USA): Talk at the 26th International Conference on Computing in High Energy Nuclear Physics on automated data synchronization between ATLAS Glance and CERN HR databases.
- **ATLAS Speakers Committee Workshop** (CERN, 2022): Presented ongoing and planned developments in ATLAS Glance tooling.