Válter Carvalho

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EXPERIENCE

Software Engineer   Jan. 2024 – Present
Agentifai   *Braga, Portugal*
- Built microservices powered by Agentic AI using RAG and LLMs - Qwen 3, Gemma 3, Llama 3.3 - via Triton.
- Developed REST APIs with Nest.js, GraphQL, MySQL and Clickhouse, handling real-time data for a dashboard.
- Integrated RabbitMQ with Golang and TypeScript for inter-service communication across multiple applications.
- Implemented unit tests and integration tests with Jest across multiple TypeScript services.
- Deployed Golang and TypeScript applications using Docker to the cloud (GCP) with Terraform and Kubernetes.

Junior Software Engineer   Jan. 2023 – Jan. 2024
Agentifai   *Braga, Portugal*
- Pioneered a Grafana and Prometheus alerting setup for multiple services for proactive monitoring capabilities.
- Contributed to the development of multiple TypeScript microservices that power Alice, an AI voice assistant.
- Leveraged TDD, OOP and design patterns (chain of responsibility, factory, builder, etc) in those applications.
- Worked with multiple database management systems like MySQL, PostgreSQL and MongoDB.

TECHNICAL SKILLS

Programming Languages: TypeScript, JavaScript, Golang, Python
Frameworks: Node.js, Nest.js, Koa.js, Express.js, Jest, FastAPI
Developer Tools: GIT, Docker, Atlassian Cloud
Cloud Infrastructure: GCP, Terraform, Kubernetes
Languages: Portuguese, English

PROJECTS

Hypatiamat: Math Questions | *Node.js, Strapi, Vue.js, MySQL*   Sep. 2021 – Dec. 2022
- Developed a full-stack web application with Strapi serving a REST API for a Vue.js front-end.
- Math questions aimed at young students that can be multiple choice, true or false, open ended or grid symmetry.
- Strong emphasis on user engagement via monthly leaderboards and events, content expansion and visual feedback.
- Available at https://qr.hypatiamat.com and it is used by thousands of younger students and teachers currently.

DataGen: JSON/XML/CSV Dataset Generator | *Node.js, Strapi, Vue.js, MongoDB*   Feb. 2021 – Aug. 2021
- Developed a full-stack web application with Strapi serving a REST API for a Vue.js front-end.
- Open-source domain-specific language (DSL) used to generate JSON/XML/CSV datasets (documentation here).
- The user could then download an automatically generated REST API with CRUD functions for those datasets.
- Available at https://datagen.di.uminho.pt for public use, currently used by hundreds of teachers and scientists.

PEER-REVIEWED PUBLICATIONS

DataGen: JSON/XML/CSV Dataset Generator   Aug. 2021
- Distinguishes DataGen as a unique application that can generate datasets paired with optional REST APIs.
- Describes the ways it can be used for quickly testing applications with fake data that follows the real schema.
- Contains documentation for the JSON-like DSL that features fuzzy generation, primitives, interpolations, etc.
- Submitted, accepted and presented at the SLATE 2021: Symposium on Languages with an international crowd.
- The publication paper has close to 500 downloads on the Dagstuhl Research Online Publication Server (DROPS).

EDUCATION

University of Minho   Braga, Portugal
Master of Science in Software Engineering   *2020 – 2022*
- **Relevant Courses**: Web Development, Event-Driven Programming (EDP), Fault Tolerance, Large-Scale Distributed Systems, Infrastructure as a Service, Back-End Development

University of Minho   Braga, Portugal
Bachelor of Science in Software Engineering   *2017 – 2020*
- **Relevant Courses**: Object-Oriented Programming (OOP), Functional Programming, Imperative Programming, Relational Databases, Non-Relational Databases, Data Structures and Algorithms