



Flávio Sousa

Full-Stack Developer

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London

Toolbox

Clojure(script)
Clojure
JavaScript
Python
C
CUDA/GPU
Node.js
Lua (NGINX)
Postgres
Elastic Search
Kafka
Datomic
Docker
Git, Linux

Main skills

Full-Stack
Product
Web Technologies
CI/CD
Functional Lang.
Algorithms
Storage Systems
Cloud Infra.

AWS

ECS, EC2
Lambda
Step Functions
CloudFormation
DynamoDB
X-ray
Cognito

Languages

Portuguese (Native)
English (Native-like)
Italian (Learning)

I am a full-stack developer with a background in engineering fluid simulation and professional experience in Clojure(script), JavaScript, Ruby, Python, and Go. My decade-long career in web development has given me a solid understanding of how web technologies function. I work best in collaborative environments and I understand the nature of compromises that have to be made in a tech stack, given time and resource constraints.

Experience

Independent Work at CodeCadre LTD

Remote

Aug 2019 - Present

Between contracts, I made several contributions under CodeCadre LTD.

- Open-source contributions in Clojure and Go.
- Tech advisor for multiple early-stage businesses (some went live, some didn't). Speaker at tech conferences.
- Mentored individuals from low-income backgrounds.

CLOJURE (SCRIPT) - GO - PYTHON - TAILWIND

Clojure Contractor under Equal Experts at Awaze

Manchester (Remote)

Aug 2022 - Dec 2022

- Migration from a legacy SQL Server to Clojure and Kotlin microservices. The team exclusively did mob programming.
- Mentored new team members by conducting regular Friday afternoon coding sessions.
- Identified bottlenecks with a custom profiling tool (See next page.)

CLOJURE - AWS - POSTGRES - KOTLIN

Career Break

Italy and Lisbon

Aug 2021 - Jul 2022

Launched passaprimeira.xyz and open-sourced it after realising there was no business case but that it was having a positive impact in the Portuguese driving school business. See next page for a conference talk. Maintained as of 2023.

Clojure Full-Stack Dev at Momentum AI

Colorado (Remote)

Aug 2019 - Aug 2021

- Full-stack Clojure monolith that ingested data from a Python data pipeline.
- Build time and other frontend optimization.
- Fully owned an Elastic Search instance for remote sensor monitoring.

CLOJURE (SCRIPT) - PYTHON - POSTGRES - ELASTICSEARCH

Cloud Services Engineer at Youview

London

Oct 2018 - Aug 2019

- Microservices in Clojure, Go and Javascript, that integrated with a host of AWS services.
- Successfully reduced the cloud services bill by consolidating a set of overly fragmented microservices.

NODE.JS - GO - CLOJURE - AWS - MICROSERVICES

Tech community

- Speaker at Babashka Conf. 2023 [🔗](#)
- Speaker at Equal Experts Conference. 2023 [🔗](#)
- Clojure macros for performance testing. 2022 [🔗](#)
- Maintaining Open Pass Rates. 2021 [🔗](#)
- Open Pass Rates Jupyter notebooks. 2021 [🔗](#)

Research Papers

- Faster Than Real Time Stochastic Fire Spread Simulations, 2013. [doi](#)
- Simulation of Surface Fire Fronts Using Firelib and GPUs, 2012. [doi](#)
- Numerical Investigations on the Inter-Car-Gap Flow for a Generic High-Speed Train, 2011. [doi](#)

Awards

- Second Place winner in the MSc. Category of the 2011 Fraunhofer Challenge.
- Semi-finalist at an MIT-backed Startup Pitch Competition.

Training and certificates

- Think Again: How to Reason and Argue
Coursera, 2016. [🔗](#)
- Algorithms, Part 1
Coursera, 2017. [🔗](#)
- Vipassana 10-Day Meditation Retreat
Chennai, India, 2018.
- Neural Networks and Deep Learning
Coursera, 2021. [🔗](#)
- Improving Deep Neural Networks: Hyperparameter Tuning, Regularization and Optimization
Coursera, 2021. [🔗](#)
- Synapses, Neurons and Brains
Coursera, 2021. [🔗](#)
- Build a Modern Computer from First Principles
Coursera, 2022. [🔗](#)
- Philosophy of Mind
DCE Oxford, 2022.
- Seminars on Bitcoin
Chaincode Labs, 2023.

Clojure Engineer at Funding Circle

London

May 2017 - Sep 2018

- Kafka microservices in Clojure.
- Volunteered as part of a crisis team for production issues on multiple occasions.
- Developed in-house tooling to SSH into Kafka dev environments.

CLOJURE - KAFKA - RUBY - EVENT-STREAMING

Software Engineer at Style.com

London

Apr 2015 - May 2017

- E-Commerce built with Clojure(script) and Datomic.
- Designed and built a high-performing, lightweight server that gated the main app during pre-launch using NGINX/Lua and an Alpine Linux Docker image.

CLOJURE (SCRIPT) - DATOMIC - NGINX/OPENRESTY

Independent Full-Stack Developer

Lisbon

Mar 2014 - Apr 2015

- Bumpy independent experience in a struggling economy. Helped launch businesses, still live as of 2023.
- Published a RoR project and a custom Shopify store.

RUBY ON RAILS - NODE.JS - SHOPIFY

Application Developer at Crowdprocess

Lisbon

Mar 2013 - Mar 2014

- First app developer for a distributed computing platform. Collaborated with researchers to port a number of algorithms to our platform: computer vision, neuroscience, bioinformatics, and genetic algorithms.
- Released a forest-fire model based on original research.

NODE.JS - POSTGRES - POSTGIS - C/C++ - PYTHON

Research Assistant at University of Lisbon

Lisbon

Feb 2010 - Nov 2012

- Invited to work on funded research while studying, after volunteering at a fluid simulation lab several times.
- Co-authored two papers with 28 citations as of 2023 and developed a GPU algorithm that achieved speed-ups of 200 times.

C - CUDA - JAVA - STARCCM+ - PARAVIEW

Education

MSc. in Mechanical Engineering at University of Lisbon

Sep 2008 - Jun 2011

Course representative for 2009/2010. Worker student. Grade: A.

BSc. in Mechanical Engineering at University of Lisbon

Sep 2004 - Sep 2008