





# Flávio Sousa

## Software Engineer

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UK

### Toolbox

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

### Languages

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

### Main skills

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

Backend focused full-stack developer with a background in engineering fluid simulation and professional experience in Clojure(script), JavaScript, Ruby, Python, Kotlin, and Go. My decade-long career in software has given me a solid understanding of how web technologies function, as well as the underlying OS and network infrastructure. I believe the best teacher is a challenging environment and collaborative teammates.

## Experience

### Senior Software Engineer at Ibis.ai

Belgium

Sep 2023 - Present

Developed full-stack web applications for SNOMED and ICD-10 AI models, and ETL with sensitive medical data. As the first employee, collaborated with the founders on the main app, built Azure Cloud infrastructure and made the stack run on windows and linux containers. The app is deployed on-premise at more than 20 hospitals across Belgium, having grown from only two when I joined. Created cloud decoupled CI/CD pipelines. Provisioned on-site servers for Docker-based deployments, implementing security best practices - Docker Trust, rootless mode, and CVE scanning.

CLOJURE(SCRIPT) - AZURE - DOCKER

### Career break

Lisbon

Jan 2023 - Aug 2023

While procuring a new contract in a slow economy, I engaged with the community by: speaking at two tech conferences, working on my open source driving school aggregator with a Clojure stack, and fixing a Clojure/Babashka library that integrated a filesystem notification Go library.

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 Clojure practice 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.

CLOJURE(SCRIPT)

### 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.
- Drastically reduced build time and overall frontend optimization with shadow-cljs and devcards.
- Created and maintained an Elasticsearch instance for log collection and critical alerting of sensor issues.

CLOJURE(SCRIPT) - PYTHON - POSTGRES - ELASTICSEARCH

## 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.

## Cloud Services Engineer at Youview

London

Oct 2018 - Aug 2019

Microservices in Clojure, Go and Javascript, that integrated with AWS services. Successfully pitched an initiative to reduce the cloud services bill by consolidating a set of overly fragmented microservices.

NODE.JS - GO - CLOJURE - AWS - MICROSERVICES

## Clojure Engineer at Funding Circle

London

May 2017 - Sep 2018

Kafka CQRS and microservices in Clojure. I was part of a migration/re-architecture fintech project that took care of redistributing payments made by loan recipients to investors.

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 NGINX/Lua lightweight server to gate the main app during pre-launch. Successfully pitched the technology choice to the rest of the team.

CLOJURE(SCRIPT) - DATOMIC - NGINX/OPENRESTY

## Independent Full-Stack Developer

Lisbon

Mar 2014 - Apr 2015

Published a RoR project and a custom Shopify store. Provisioning servers for a Ruby on Rails stack. Node.js service integrating an IoT weather station cloud platform

RUBY ON RAILS - NODE.JS - SHOPIFY

## Application Developer at Crowdprocess

Lisbon

Mar 2013 - Mar 2014

First application developer at a distributed computing startup. Led development of an internet browser-based 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 2025 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

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

Sep 2008 - Jun 2011

### BSc. in Mechanical Engineering at University of Lisbon

Sep 2004 - Sep 2008