

Thiago Figueiredo Costa

STAFF SOFTWARE ENGINEER · TECH LEAD

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“Success usually comes to those who are too busy to be looking for it.” - Henry David Thoreau

Summary

I build backend systems and I care about how fast they run. I have been programming for 17 years, from LEGO Mindstorms robots to Google Search. Staff Software Engineer and Tech Lead of the Accounts squad at ng.cash, a Brazilian digital bank: authentication, onboarding/KYC, devices and PIN across 8 services. Before that, Python data analysis drove C++ performance work in Google Search, and at bwtech I went from intern to tech lead in 13 months on a Kafka platform processing over 4 TB a day. Outside work I run nanotech, a small software studio. Published researcher in machine learning and security (9 papers, Honorable Mention at BRACIS 2022), with a double degree from CEFET-MG and Université Grenoble Alpes.

Experience

ng.cash

Belo Horizonte (Remote), Brazil

STAFF SOFTWARE ENGINEER - TECH LEAD

Apr. 2026 - Current

- Technical direction for the Accounts squad: authentication, onboarding/KYC, devices and PIN (8 services)
- Led the squad's turnaround in delivery and quality, from one of the weakest teams in engineering to the strongest
- Set the squad's code review and quality standards, enforced through an AI-assisted review workflow
- Designed and led end-to-end tracing of login and signup across the app, API gateway and 5 services. Owned the squad's observability strategy
- Incident response and on-call: triage, post-mortems and a runbook-backed base of past incidents
- Built the squad's deploy tooling: dependency-ordered promotions across 12 repositories
- Drove the Node.js 20 to 24 runtime upgrade across 11 services
- Led the migration of a subscription-billing service into the company's primary AWS account
- Wrote the squad's knowledge base: 46 service, flow and onboarding documents
- TypeScript, NestJS, Python (tooling), AWS (ECS, Lambda, SQS, SNS, EventBridge, DynamoDB, CDK), Datadog and PostHog

nanotech software

Belo Horizonte, Brazil

FOUNDER & SOFTWARE ENGINEER

Jun. 2024 - Current

- Run a small software studio whose products share one Python platform, nt-stack (crypto container, storage, web commons), reused across 30+ Python projects
- Built nt mail (terminal mail client over an encrypted local IMAP cache), nt wall (TOTP login wall for every site on the self-hosted VPS edge) and nt wallet (local password manager)
- Security by default: nt-webship build gate with leak audit, SRI and CSP; reproducible builds; 20,000+ automated tests across the suite
- Python, uv, pytest, ruff, mypy (strict), Docker and Caddy

bwtech

Belo Horizonte, Brazil

STAFF CONSULTING ENGINEER

Sep. 2025 - Dec. 2025

- Deployed and managed an on-premise Kubernetes cluster with a stack for a Data Lakehouse handling massive sensitive data ingestion and ETL
- Deployed and tuned Apache Spark, Apache Iceberg, MinIO, Rancher, Prometheus, Grafana, IOMETE and DNS/NTP servers
- Programming in Python, Shell, Scala, and C#
- Experimented with SeaweedFS, Ceph and Garage to replace MinIO due to its maintenance mode
- Guided engineering teams to adopt best coding practices, focusing on performance, readability, maintainability, and testing
- Led refactoring initiatives to improve legacy code and optimize system performance

Cadoma

Belo Horizonte (Remote), Brazil

CTO

Oct. 2024 - Sep. 2025

- Development of a new system for the company aiming to replace legacy code
- Programming in C++ for embedded systems
- Programming in Python with PostgreSQL for the backend
- Javascript and Python development using also HTML and CSS with Tailwind for the frontend
- Software and technology consulting
- Support for the company legacy system

Nexos

Belo Horizonte, Brazil

SR. DEVELOPER PARTNER

May 2024 - Sep. 2024

- Java Development and consultancy for the development of a Twitter-like social network for the Inter Bank

Google

Belo Horizonte, Brazil

SOFTWARE ENGINEER

Mar. 2022 - May 2024

- Make the search engine better, faster and cheaper
- Optimizing the search engine C++ code based on data analysis done with Python
- Management, unification and development of search engine log processing pipelines
- Research and analysis of LLM performance optimizations in search engines

Syngenta Digital Brasil

Belo Horizonte (Remote), Brazil

FULL STACK ENGINEER

Nov. 2021 - Mar. 2022

- Python Development of an API to provide NDVI satellite images
- Serverless Framework to deploy Python code on AWS, and monitoring with Datadog
- Working with AWS Cloud Services such as Lambda, DynamoDB, X-Ray, Parameter Store, EC2, SQS and SNS
- Working with an international team located in the USA

bwtech

Belo Horizonte (Remote), Brazil

TECH LEAD

Jun. 2021 - Nov. 2021

DEVELOPER III

Mar. 2021 - May 2021

DEVELOPER I

Dec. 2020 - Feb. 2021

DEVELOPMENT TRAINEE

Sep. 2020 - Nov. 2020

DEVELOPMENT INTERN

May 2020 - Aug. 2020

- Distributed System Developer using Java, Kafka On-Premise and MinIO for massive data processing (over 4 TB daily)
- Deployment on Docker Swarm On-Premise with CLI and Portainer
- System monitoring with Grafana and Prometheus
- Task scheduling with bash and python scripts over Airflow
- Greenplum Database with insertions coming from Greenplum Streaming Server (GPSS)
- IT operations in General (Ops) to manage an 80 nodes cluster

Strider Agro

Belo Horizonte, Brazil

FULL STACK DEVELOPER INTERN

Jan. 2019 - Aug. 2019

- Full Stack developer using Angular 7 and Spring
- Android developer using Kotlin and Java 8
- Working with georeferenced systems
- Unit and integration testing using JUnit 4 and 5
- BDD Testing with espresso and cucumber

Equipe B Arquitetura

Belo Horizonte, Brazil

WEB DEVELOPER

Aug. 2018 - Dec. 2018

- Full-stack developer using mainly AngularJS, Spring Boot and Google Maps API
- Database administrator
- Modification of the system architecture
- Development of Web-Based Applications for Android and iOS

Commit Jr (Computer Engineering junior enterprise), CEFET-MG

Belo Horizonte, Brazil

CO-FOUNDER & PRESIDENT

Feb. 2018 - Jun. 2019

- Co-founded, with four classmates, the junior enterprise of CEFET-MG's Computer Engineering department and took it into the institutional recognition process
- Led the founding work with the university's Junior Enterprise office: statute, governance and department approval
- As President, coordinated the founding team and its first software projects
- 280 certified hours

Centro Federal de Educação Tecnológica de Minas Gerais (CEFET-MG)

Belo Horizonte, Brazil

SCIENTIFIC INITIATION FELLOW

Mar. 2017 - Aug. 2018

- Creation of a low-cost exergames platform called Move2Play
- API development using Java
- Game development using libGDX
- UI design using JavaFX

nanotech Software (Freelance)

Belo Horizonte, Brazil

FREELANCER

Mar. 2013 - Apr. 2016

- Identifying and repairing hardware and software failures for desktops and notebooks
- Configuration and assembly of computers, printers and computer networks
- Computer formatting
- Started nanotech as an ambitious early-stage idea and kept it going through a large volume of hands-on client work

Academic

Universidade Federal de Minas Gerais (UFMG)

Belo Horizonte, Brazil

MASTER'S DEGREE IN COMPUTER SCIENCE - FOCUSED IN COMPUTATIONAL NEUROSCIENCE

Aug. 2022 - Paused

- Prediction of epileptic seizures through the use of AI techniques to electroencephalogram (EEG) signals
- Completed subjects, paused the program to focus on work

Institut Universitaire de Technologie (IUT1) - Université Grenoble Alpes

Saint-Martin-D'Hères, France

BACHELOR'S+3 IN COMPUTER NETWORKS AND TELECOMMUNICATIONS WITH HONORS

Sep. 2019 - Aug. 2020

- Best of the class in all scientific and technological subjects, second place on final project and internship
- Specializing in Computer Networks, Mobility, Security
- Final Project: Design of a Secure Professional Computer Network

Centro Federal de Educação Tecnológica de Minas Gerais (CEFET-MG)

Belo Horizonte, Brazil

BACHELOR'S+5 IN COMPUTER ENGINEERING

Mar. 2016 - May 2021

- GCC - Competitive Computing Group
- Scientific Initiation Fellowship - Project Move2Play
- Voluntary Scientific Initiation - Project Aventura Discreta
- COMPET - Tutorial Education Programme of Computing, Aug. 2017 - May 2018, 20 h/week; Scrum Master for a month
- DCE - Students Central Directory: Communication Support → Communication Director → Coordinator → President
- Co-founder and President of Commit Jr, the Computer Engineering junior enterprise of CEFET-MG
- Awarded for excellence with a full scholarship to study at Université Grenoble Alpes
- Academic mobility to IUT 1 de Grenoble, 2019-2020, 14 subjects credited back
- Supervised internship, 300 h (2019)
- Third place in the graduating students class
- One of two students in the class to graduate without failing a subject, and the only one to skip ahead a semester
- Final Project: Using Genetically Tuned Smart Neural Network to Prioritize Software Vulnerabilities Patching
- Degree conferred 12 May 2021 (Engenheiro de Computação; 4,380 h)

Serviço Nacional de Aprendizagem Industrial (SENAI)

Belo Horizonte, Brazil

TECHNICAL DEGREE IN ELECTRONICS

Mar. 2013 - Dec. 2014

- Digital electronics
- Analogue electronics
- Automation
- Micro-controllers
- Final Project: Smart Tools Panel with detection and alarms using PIC

EE Maestro Villa Lobos (Reinventando Ensino Médio)

VOCATIONAL DEGREE IN INFORMATION TECHNOLOGY

Belo Horizonte, Brazil

Mar. 2013 - Nov. 2014

- Information technology and computer theory
- Computer maintenance
- Spreadsheets and text editing
- Game development and programming

Skills

Programming languages - Advanced	Python, C++, TypeScript, Java, Shell Script
Programming languages - Intermediate	Kotlin, C, C#, Scala, JavaScript, Swift
Programming languages - Basic	Delphi, Verilog, Batch, PowerShell, Haskell, Prolog, Perl, SciLab, Arduino, Go
Backend	NestJS, Node.js, FastAPI, Flask, SQLAlchemy, Spring Boot
AWS	ECS, SQS, SNS, EventBridge, API Gateway, DynamoDB, CDK
Data & Distributed Systems	Kafka, Spark, Iceberg, Kubernetes, Docker Swarm, MinIO, Airflow
Observability	Datadog, Prometheus, Grafana, PostHog
Databases	PostgreSQL, DynamoDB, MySQL, MongoDB, Redis, Greenplum
Machine Learning	PyTorch, scikit-learn, NumPy, OpenCV
Tooling	Git, GitLab, Docker, uv, pytest, ruff, mypy, Jest, Caddy
Frontend	React, Angular, Vue, Tailwind, HTML, CSS, jQuery, PySide6 (Qt)
Markup languages	Markdown, XML, $\text{\LaTeX}$
Operating Systems	Linux (Advanced SysAdmin), Kali Linux, macOS, Windows
Learning	Quick to learn and improve programming languages English (IELTS Academic 7.5: L 8.5, R 7.5, W 6.5, S 7.0; TOEFL ITP 587, Aug. 2018; EF SET 80/100, CEFR C2, Nov. 2020, efset.org/cert/iCLpYq), Português nativo, Français débutant, Español principiante
Languages	

Honors & Awards

2022	Honorable Mention , BRACIS 2022 - Best Papers Awards	Campinas, Brazil
2020	3rd Place , XIX SBGames - Best Education Track Papers Awards	Recife, Brazil
2020	Honors , Institut Universitaire de Technologie 1 - Course Completion	Saint-Martin-D'Hères, France
2018	Top 31 (Highest Rank) , Hackathon - UNICEF SAMSUNG	São Paulo, Brazil
2018	3rd Place , Hackathon - IOT Day	Belo Horizonte, Brazil
2018	3rd Place , Programming Marathon - Festival Latinoamericano de Instalación de Software Libre (FLISoL) - Latin American Festival of Open-Source Software Installation	Florestal, Brazil
2016	2nd Place , Dev Olympics (Game Development Competition), DECOM CEFET-MG - game The.COM	Belo Horizonte, Brazil

Papers

Exploitability Assessment with Genetically Tuned Interconnected Neural Networks

Campinas, Brazil

PRIMARY AUTHOR & DEVELOPER

Nov. 2022

BRACIS 2022

- Honorable Mention, Best Papers Awards
- DOI: 10.1007/978-3-031-21686-2_41 - [link](#)

Challenges on Prioritizing Software Patching

PRIMARY AUTHOR & DEVELOPER

SINCONF 2022 - 15th IEEE International Conference on Security of Information and Networks

- DOI: 10.1109/SIN56466.2022.9970537 - [link](#)

Hammam Sousse, Tunisia

Nov. 2022

Stock-Pred: The LSTM Prophet of the Stock Market

PRIMARY AUTHOR & DEVELOPER

OL2A: International Conference on Optimization, Learning Algorithms and Applications 2022

- DOI: 10.1007/978-3-031-23236-7_21 - [link](#)

Bragança, Portugal

Oct. 2022

Design and Architecture of an Open Multiplayer Exergaming Platform called Move2Play

AUTHOR & DEVELOPER

XXI SBGames - Computing Track

- DOI: 10.1109/SBGAMES56371.2022.9961109 - [link](#)

Natal, Brazil

Oct. 2022

A Methodology for Definition and Refinement of a LSTM Stock Predictor Architecture using iRace and NSGA-II

PRIMARY AUTHOR & DEVELOPER

I BWAIF - XLII CSBC

- DOI: 10.5753/bwaif.2022.222869 - [link](#)

Niterói, Brazil

Aug. 2022

White Hat Hacking: Securing networks with offensive strategy – A systematic literature review

PRIMARY AUTHOR

XXII Encoinfo

- ISSN: 2447-0767 - [link](#)

Palmas, Brazil

Nov. 2020

Um Projeto de Jogo Aplicativo Para Auxiliar o Sexto Ano do Ensino Fundamental

AUTHOR & DEVELOPER

XIX SBGames - Education Track

- Translated title: “An Application Game Project to Aid Sixth Grade Teaching”
- Best Paper, 3rd place, Education Track
- ISSN: 2179-2259 - [link](#)

Recife, Brazil

Nov. 2020

The Design of the Academic Life Game AVENTURA DISCRETA

PRIMARY AUTHOR & DEVELOPER

XVIII SBGames - Artes & Design - Design Cases

- ISSN: 2179-2259 - [link](#)

Rio de Janeiro, Brazil

Oct. 2019

An Architecture for Using Smartphones as Interfaces for Computer Games

PRIMARY AUTHOR & RESEARCHER

XVII SBGames - Computing Track

- ISSN: 2179-2259 - [link](#)

Foz do Iguaçu, Brazil

Nov. 2018

22 citations, h-index 3 (Google Scholar, Sep. 2026).

Extracurricular Activity

Pacific Security

ETHICAL HACKER INTRODUCTION

- Course awarded at no cost after being classified in a Capture The Flag hacking contest
- Information Gathering, Finding Vulnerabilities, Exploitation, Password Attacks, Client-Side Exploitation, Social Engineering, Post Exploitation, Web Application Testing and Wireless Attacks

Belo Horizonte, Brazil

Sep. 2020 - Feb. 2021

Participant, then robotics workshop leader

Belo Horizonte, Brazil

PUC MINAS ENRICHMENT PROGRAMME FOR HIGH-ABILITY STUDENTS

2009 - 2011

- Selected through interviews to take part in PUC Minas's extension programme for gifted students (Núcleo Sociedade Inclusiva)
- Built and programmed LEGO Mindstorms NXT robots, created to compete in robot fights
- By 2010 led the robotics workshop for newer participants and presented a humanoid-robot project to the community (Dec. 2010)
- Featured in Estado de Minas ("Desafio notável", 1 Jun. 2010) for teaching robotics to peers at 12

Student

Belo Horizonte, Brazil

ENGLISH CLASSES

Mar. 2011 - Jun. 2012 ·

Mar. 2016 - Feb. 2017

- First course school: Number One
- Second course school: The Best (65 h, Advanced)

Presentations

20th Scientific Initiation Meeting, Science & Technology Week (CEFET-MG)

Belo Horizonte, Brazil

PRESENTER, MOVE2PLAY RESEARCH (PIBIC)

Oct. 2018

"MOVE2PLAY: uma plataforma para exergames e o whipping top"

SEDCITEC - IFSP

São Paulo, Brazil

INSTRUCTOR, C++ WORKSHOP

Sep. 2018

For an audience of about 30 people

Festival Latinoamericano de Instalación de Software Libre (FLISoL)

Florestal, Brazil

INSTRUCTOR, INTRODUCTION TO L^AT_EX

Apr. 2018

For an audience of about 30 people

Festival Latinoamericano de Instalación de Software Libre (FLISoL)

Florestal, Brazil

INSTRUCTOR, INTRODUCTION TO GIMP

Apr. 2018

For an audience of about 30 people

Dia da Integração 2018/1 (CEFET-MG Event)

Belo Horizonte, Brazil

INSTRUCTOR, INTRODUCTION TO LINUX

Mar. 2018

For an audience of about 30 people

Dia da Integração & Semana da Computação (CEFET-MG Events)

Belo Horizonte, Brazil

INSTRUCTOR, GIT SHORT COURSE

5 Sep. 2017 · 24 Oct. 2017 · 14 Mar. 2018

For an audience of about 30 people

Feira Internacional de Negócios, Inovação e Tecnologia (FINIT) - Business, Innovation and Technology International Fair

Belo Horizonte, Brazil

EXHIBITOR, SCRATCH WORKSHOP

Nov. 2017

For an audience of about 30 people

Feira Internacional de Negócios, Inovação e Tecnologia (FINIT) - Business, Innovation and Technology International Fair

Belo Horizonte, Brazil

EXHIBITOR, RUBIK'S CUBE WORKSHOP

Nov. 2017

For an audience of about 30 people