



# Humberto Sandmann

Computer Scientist & Professor

## PROFILE

Senior software architect and artificial intelligence engineer with 20+ years building high-stakes systems across banking, fintech, and retail — core banking, cryptography (PKI/HSM), high-performance computing, computer vision, and cloud-native microservices. D.Sc. in neural computing; also a university professor teaching software design, AI, and distributed systems.

## EXPERIENCE

**Founder · H-Sandmann** 2006–present

Independent consultancy in machine learning and software architecture.

Machine Learning Software Architecture

**Co-Founder · SelsanTech** 2012–2023

Co-founded a venture delivering machine-learning and software-architecture solutions.

Machine Learning Software Architecture

**Senior Software Architect & Machine Learning Engineer · RockSpoon** 2018–2019

Architected POS/ERP/payroll platforms and computer-vision/ML features for a restaurant-tech company.

POS ERP JavaEE PostgreSQL OpenCV Computer Vision Go Android Kotlin

**Senior Consultant, Computational Optimization · Banco Votorantim** 2015–2016

Return-on-equity optimization on high-performance computing infrastructure for a major bank.

RoE High-Performance Computing J2EE Spring Boot Jenkins Test Automation

**Senior Consultant, Computational Optimization · TecBan** 2011–2011

ATM network optimization with in-memory databases and high-performance computing.

ATM J2EE In-Memory DB High-Performance Computing

**Senior Software Engineer / Architect · ABN Amro Bank** 2006–2007

Core-banking, stock-market and trading systems with cryptography and PKI.

Core Banking Trading Cryptography HSM BouncyCastle PKI PKCS Java Servlet

**Senior System Analyst · Politec** 2005–2006

**Senior Software Engineer / Architect · EverSystems** 2004–2005

**Senior System Analyst · Central Online** 2002–2003

**Senior System Analyst · Datamace** 1999–2002

**Computer Programmer · Heraeus Electro-Nite** 1998–1999

## EDUCATION

**D.Sc.** · Electrical Engineering — Polytechnic School, University of São Paulo 2007–2012

**M.Sc.** · Electrical Engineering — Polytechnic School, University of São Paulo 2003–2006

**B.Sc.** · Computer Science — Faculdade de Engenharia Industrial (FEI) 1999–2002

Full academic CV, publications and teaching record at [hsandmann.github.io](https://hsandmann.github.io)

## CONTACT

### EMAIL

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### WEB

hsandmann.github.io

### GITHUB

hsandmann

### LINKEDIN

in/hsandmann

### PROJECT

graphole.com

## SKILLS

### Languages

Java Python Go Kotlin C

C++ JavaScript SQL

### Machine Learning & AI

Deep Learning Neural Networks

Computer Vision NLP PCA SVM

Clustering

### Backend & Architecture

Spring Boot Spring Cloud

Microservices Design Patterns

Software Architecture

### Data & Infrastructure

PostgreSQL Redis Kafka

RabbitMQ Docker Kubernetes

Spark MongoDB Neo4j

### Domains

Banking & Fintech

Cryptography (PKI/HSM)

High-Performance Computing

POS/ERP

## LANGUAGES

Portuguese Native

English Advanced

German B1