



Pedro Madruga

Principal AI Engineer · Building agentic GenAI products and teams · From idea to revenue, twice

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Principal AI Engineer and AI leader: I build GenAI products and the teams that ship them - specializing in agentic GenAI and retrieval systems (agentic RAG) for high-accuracy domains. 9+ years productionizing AI/ML, 12+ years in software engineering. I rejoined Karnov Group in 2022 as its only AI Engineer; the AI organization now spans ~20 Engineers and Architects. I created KAILA (JunoAI in Sweden), a GenAI legal assistant now used by 5k+ daily users across 4 countries, and I'm the technical creator of FLOW, a multi-agent legal workflow suite launched in June 2026 with paying customers in all four countries within the first week. I build production AI with a Domain Driven AI approach. Programming since the 90s, Linux user since 1999.

PROFESSIONAL EXPERIENCE

Principal AI Engineer, Group - Karnov Group AB

Oct 2024 - Present · Copenhagen

- AI lead for FLOW, Karnov's most AI-heavy product: a multi-agent orchestrated legal workflow suite (research, scoping, drafting, review). Technical creator, alongside two business co-creators - ideated, prototyped, and validated it with domain experts in the largest product validation in Karnov's history. Recruited and led a new multidisciplinary team of 5; executed, launched across 4 countries in June 2026 - paying customers in all four within the first week - and maintain the product
- KAILA - continued as AI lead through scaling from 3.5M to ~25M documents across 4 markets using RAG and Agentic DeepSearch. The retrieval engine I built as Senior remains the foundational core. Used by Sweden and Denmark's largest law firms, courts and authorities; millions in revenue; covered in Danish tech and professional press
- Push to turn legal domain knowledge into AI products, with a focus on revenue impact; drive AI research and strategy at Group level across all products

Senior AI Engineer - Karnov Group AB

Oct 2022 - Sept 2024 · Copenhagen

- Created KAILA from scratch as Karnov's only AI Engineer - agentic GenAI legal research assistant scaled from 5k to 3.5M documents and delivered in 6 months
- Designed and built the retrieval engine that remains KAILA's foundational core - focused on legal accuracy, in close collaboration with domain experts
- Grew the AI team from 1 (me) to 6, recruiting every member; architected the embeddings pipeline, cloud infrastructure, and AI engineering practices at Karnov
- Analyzed millions of search queries and developed multiple PoCs for business stakeholders

Senior Data Scientist - GoSimplo

Nov 2021 - Sep 2022 · Copenhagen

- Built deep learning models (Keras/TensorFlow) for financial prediction used by 100s of users
- Developed time-series models (XGBoost, ARIMA) deployed via Docker on Azure
- Processed large-scale data with Azure Synapse/SQL, delivered Streamlit dashboards

Data Scientist & Founder - JohnConnor.ai ApS

Jun 2020 - Nov 2021 · Copenhagen

- Founded AI/ML consultancy serving GrantCompass and Karnov Group
- Enhanced recommendation systems using AWS Personalize, built data warehouses

Data Scientist - Karnov Group Denmark

2018 - May 2020 · Copenhagen

- Enhanced Danish document recommendations using spaCy, Prodigy, content-based systems

EARLIER EXPERIENCE

Senior Software Engineer - Karnov Group Denmark

Apr 2017 - 2018 · Copenhagen

- Developed full-stack applications (React/Node.js), deployed on GCP/Kubernetes; built Karnov Business Optimizer

11 years as Software Engineer & Data Analyst (2006-2017): Software Engineer at Occam.ooo (2016-17), colego.dk (2015-16), and Unwire (2014-15, Nordea payment apps); Data Analyst at Copenhagenize Design Co. (2012-13, research featured in Business Insider); part-time Web Developer at Produtrónica (2006-12) during studies.

EDUCATION

Machine Learning Certificate

DTU - Technical University of Denmark
2019

Coursework in Computer & Software Engineering

Instituto Superior de Engenharia de Lisboa
2003 - 2005

MSc + BSc Environmental Engineering

Universidade Nova de Lisboa
2006 - 2012

STACK (2024 AND BEYOND)

Python · Node · LangGraph · Pydantic AI · LangFuse · Claude Code (spec-driven) · gRPC · RAG & Information Retrieval · GCP · Azure

LANGUAGES

Danish: Conversational · **English:** Native/Bilingual · **Portuguese:** Native · **Spanish:** Professional · **French:** Limited Working

RECOGNITION & LEADERSHIP

- Built Karnov's AI function from one person (2022) to an organization of ~20 AI Engineers and Architects; personally recruited and led both product teams (KAILA from 1 to 6, FLOW from 1 to 5), with people and budget responsibility
- Work underpins Karnov's AI strategy: the company publicly reported its AI user base grew 5x in 2025 and named accelerating AI adoption as a driver of organic growth (Karnov Group FY2025 & Q1 2026 interim reports)
- KAILA covered in Danish tech and professional press (Version2/Ingeniøren, Finansforbundet, Djøfbladet)
- Work daily alongside Architects, Software Engineers and DevOps - fluent across all three, with a software engineering and architecture background that lets me design and reason about the systems AI products run on, not just the models
- Established and led internal AI knowledge-sharing at Karnov - multiple internal talks across both roles on new technologies, AI techniques, and emerging practices

ADDITIONAL INFORMATION

Open Source: Creator of react-native-clean-project (1.3K+ GitHub stars); contributor to multiple Open Source projects. **Certifications:** SQL for Data Science, multiple cloud certifications. **Interests:** Family, long-distance running (inc. ultramarathons), reading non-fiction, hacking personal projects.