Miguel Cabral Dias Fernandes de Oliveira

Copenhagen, Denmark migueloliveir8@gmail.com 911516543 miguelcabraloliveira.com
linkedin.com/in/miguel-cabral-oliveira github.com/MiguelCabralOliveira

Education

Technical University of Denmark (DTU), MSc Eng in Artificial Intelligence and Data — Sept 2025 – Present

Porto Polytechnic Institute of Engineering (ISEP), BS in Computer Science — Sept 2021 – Jun 2025

- GPA: 14/20
- **Coursework:** Computer Architecture, Databases, Advanced Algorithms, Graphical Systems and Interaction, Statistics and Empirical Methods for Computing

University of Hradec Králové, Erasmus+ Exchange — Sep 2023 – Jan 2024

- Exchange program at the Faculty of Informatics and Management in Hradec Králové, Czech Republic.

Bristol School, Cambridge English Qualification — 2019

- Awarded the FCE, confirming B2-level proficiency.

Experience

Machine Learning Engineer, Revenya - Fintech Lending — Oct 2025 – Present

- Developing core machine learning algorithms for corporate credit scoring, effectively automating the risk assessment and loan approval process.
- Designing predictive models that analyze financial data to determine lending eligibility, functioning as an AI-driven banking decision engine.

AI Software Engineer, Napps - Mobile App Builder — Feb 2024 – Oct 2025

- **Lead Architect, NIA (Napps AI) Engine:** Architected the company's flagship AI engine using a hybrid **Graph Neural Network (GNN)** model to map complex user interactions, delivering highly relevant, real-time recommendations that increased user engagement.
- **End-to-End MLOps Pipeline on AWS:** Engineered and deployed a scalable MLOps pipeline, automating the full ML lifecycle from data ingestion to model deployment and establishing a robust CI/CD framework for all ML models.
- **LLM-Powered Content Automation:** Built an agentic workflow using **LangChain** to autonomously parse e-commerce sites and generate structured data for native mobile apps, drastically reducing client time-to-market.
- **Autonomous Lead Generation & Scoring System:** Designed a system using **NLP** to validate and enrich leads, a predictive model to score conversion probability, and **GenAI** for personalized outreach, significantly increasing sales pipeline efficiency.

Algorithmic Trader, BitPetite - Crypto Platform — Mar 2023 – Dec 2024

- Developed and implemented automated trading algorithms responsible for executing buy/sell orders based on user fund inflows, ensuring efficient capital deployment.
- Optimized trade execution logic to manage platform liquidity and asset allocation across cryptocurrency markets.

Publications

A Dual-Model Architecture for E-commerce Recommendation System, ICITS'26 (Springer Proceedings) — 2026

- Proposed a context-aware, dual-model architecture that adapts its recommendation strategy to user intent: a **Temporal Graph Network (TGN)** for discovery-oriented browsing on the homepage, and an evolutionary-optimized **KNN** for focused comparison on product pages.

Certifications

Machine Learning Specialization Jun 2025

DeepLearning.AI & Stanford University – *via Coursera*

- **Advanced Learning Algorithms**
  Credential ID: 46OB9YU0K6RJ
- **Supervised Machine Learning: Regression and Classification**
  Credential ID: ZOIVYSTR341H
- **Unsupervised Learning, Recommenders, Reinforcement Learning**
  Credential ID: H9IAQ7RVY1PY

Overall Specialization Credential ID: 2LU0WLMKOCNH

Projects

Napps Recommender: AI-Powered Recommendation Engine for E-commerce 2025

- **Bachelor's Thesis Project:** Distinguished with a grade of 19/20 for its technical depth and comprehensive implementation of a real-world machine learning system.
- Developed a dual-model architecture: a **Weighted KNN (WKNN)** optimized with an **evolutionary algorithm** for content-based recommendations, and a **Temporal Graph Network (TGN)** implementing a **Transformer-based attention mechanism** to model dynamic user behavior.
- Engineered a complete MLOps pipeline on AWS: utilized **S3** for data and model artifact storage, orchestrated the entire workflow with **AWS Step Functions**, trained models at scale using **SageMaker**, and served real-time predictions with low latency via **AWS Lambda**.
- **Tech Stack:** Python, PyTorch, Scikit-learn, Pandas, AWS (S3, Lambda, SageMaker, Step Functions).

MedConnect: Hospital Management & Scheduling Optimization System 2024

- Architected and developed a comprehensive, full-stack hospital management platform for the subject LAPR5. Designed to streamline administrative workflows, enhance operational efficiency, and improve patient/staff experiences.
- **Academic Distinction:** Achieved a perfect grade (20/20) and was lauded by Professor Pedro Pinto (ISEP) as one of the most outstanding and well-engineered projects evaluated in his career.
- **Tech Stack:** C#, Node.js, Angular, MySQL, NoSQL, OpenAI API, Google API.

Repository2Docx: Semantic Code Analysis for LLM Ingestion 2023

- Developed a semantic analysis tool to automate the generation of structured documentation from source code repositories, structured for optimal ingestion by Large Language Models (LLMs).
- Implemented an **Abstract Syntax Tree (AST)** parser to traverse the codebase, extracting key components and their semantic relationships.
- **Tech Stack:** Python, AST Parsing, NLP.

MovieRecommender: Content-Based Recommendation Engine 2022

- Engineered a content-based recommendation engine using an NLP pipeline that leveraged **TF-IDF vectorization** to transform unstructured text into a high-dimensional feature space.
- **Tech Stack:** Python, Scikit-learn, Pandas, NLTK.

Awards & Competitions

First Place, Kaggle Competition: Counter-Strike Sticker Market Forecasting 2023

- Developed the winning predictive model for forecasting price trends in the highly volatile Counter-Strike virtual item market, outperforming all other international participants.
- **Skills Demonstrated:** Time-Series Analysis, Feature Engineering, Predictive Modeling (ARIMA, XGBoost), Market Analysis.

European Jiu-Jitsu Champion 2020 – Present

- Achieved the title of European Champion, competing against elite athletes from across the continent and

succeeding at the highest level of the sport.

- Demonstrated exceptional discipline, strategic problem-solving, and resilience developed through years of dedicated training and high-stakes international competition.

Technical Skills

AI & Data Science: PyTorch, Scikit-learn, Keras, Pandas, Deep Learning, Transformers, NLP, LLMs, LangChain, Vector Database, Apache Airflow, ETL, Recommendation Systems

Languages & Databases: Python, SQL (MySQL, PostgreSQL), NoSQL (MongoDB), C#, Java

MLOps & Cloud: AWS Cloud, Docker, Git, CI/CD, MLOps, REST APIs

Software Engineering: Agile, Scrum, System Design, Microservices, .NET, FastAPI

Certificates Appendix

3 Courses

Supervised Machine Learning: Regression and Classification

Advanced Learning Algorithms

Unsupervised Learning, Recommenders, Reinforcement Learning

Jun 19, 2025

Miguel Cabral Oliveira

has successfully completed the online, non-credit Specialization

Machine Learning

Congratulations on completing all three courses of the Machine Learning Specialization! You studied modern machine learning concepts, including supervised learning (linear regression, logistic regression, neural networks, decision trees), unsupervised learning (clustering, anomaly detection), recommender systems, and reinforcement learning. You learned some of the best practices for building machine learning models. You've also gained practical skills to apply machine learning techniques to challenging real-world problems. Now #BreakIntoAI and start building your career in machine learning!

Andrew Ng
Founder,
DeepLearning.AI and
Adjunct Professor,
Stanford University

The online specialization named in this certificate may draw on material from courses taught on-campus, but the included courses are not equivalent to on-campus courses. Participation in this online specialization does not constitute enrollment at this university. This certificate does not confer a University grade, course credit or degree, and it does not verify the identity of the learner.

Verify this certificate at:
https://coursera.org/verify/specialization/2LU0WLMK0CNH

DeepLearning.AI

Stanford | ONLINE

COURSE CERTIFICATE

Jun 19, 2025

Miguel Cabral Oliveira

has successfully completed

Advanced Learning Algorithms

an online non-credit course authorized by DeepLearning.AI and Stanford University and offered through Coursera

Andrew Ng
Founder, DeepLearning.AI and Adjunct Professor, Stanford University

Verify at:
https://coursera.org/verify/46OB9YU0K6RJ

Coursera has confirmed the identity of this individual and their participation in the course.

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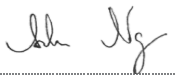

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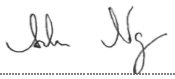

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Recommendatino Letters Appendix

Instituto Superior de Engenharia do Porto

Instituto Politécnico do Porto

Departamento de Engenharia Informática

CARTA DE RECOMENDAÇÃO

Conheço o Miguel Oliveira há já vários anos, muito antes de iniciar o seu percurso académico no ISEP. Assinalo as suas qualidades pessoais e humanas, seguramente induzidas pela sua família, tratando toda a gente com cordialidade e respeito.

O seu percurso académico tem vindo num crescendo, tendo-se afirmado de uma forma consistente nos tempos mais recentes.

Dada a sua capacidade intelectual, as suas qualidades técnicas e a sua predisposição para estudar novos assuntos, estou seguro de que, qualquer que seja o desafio académico, profissional ou pessoal que enfrente, o Miguel tem ótimas condições para atingir os seus objetivos.

Não duvido que a sua intenção de se candidatar ao Mestrado em Engenharia de Inteligência Artificial foi uma decisão ponderada e com uma perspetiva sólida de terminar com sucesso a sua formação.

Assim, é para mim uma honra escrever esta carta de recomendação para o Miguel Oliveira.

Marílio Cardoso
Professor Adjunto do Departamento de Engenharia Informática
Instituto Superior de Engenharia
Instituto Politécnico do Porto

Porto, 19 de junho de 2025

gecad
Grupo de Investigação em Engenharia e Computação
Inteligente para a Inovação e o Desenvolvimento

Porto, 7th of October 2025

Dear Members of the Admissions Committee,

I am writing to recommend Mr. Miguel Cabral Dias Fernandes de Oliveira for admission to the Master's in Computer Science – Artificial Intelligence and Algorithms at the Technical University of Denmark (DTU). I had the opportunity to supervise his Bachelor's Thesis at the School of Engineering of the Polytechnic Institute of Porto (ISEP).

Miguel's project, titled *"Napps Recommender: AI-Powered Recommendation Engine for E-commerce"*, was a technically advanced and well-executed project. He designed and implemented a dual-model recommendation system using Weighted KNN and Temporal Graph Networks with Transformer-based attention mechanisms. He also built a full MLOps pipeline on AWS, integrating data storage, model training, and deployment. His work was graded 19 out of 20, reflecting its strong technical and research quality.

During the project, Miguel showed solid programming and analytical skills, independence in problem solving, and a clear understanding of machine learning concepts. He is methodical, reliable, and capable of managing complex technical challenges with minimal supervision. His internship and ongoing work at Napps further demonstrate his ability to apply AI and data engineering principles in a professional context.

In short, Miguel is an excellent candidate for the master's program at DTU. He has the knowledge, skills, and commitment required to excel in this program. I fully support his application and look forward to seeing his future achievements.

Sincerely,

Gonçalo Marreiros

Full Professor at ISEP /IPP
Director of GECAD

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