

George Drakoulas, PhD

Data Scientist & Applied AI Engineer

Rotterdam, Netherlands · +31 6 5173 0553 · geo.drakoulas@gmail.com · linkedin.com/in/georgedrakoulas · github.com/drakegeo

Data scientist with 7+ years building production-grade ML and AI systems for heavy industry, pairing a physics-based simulation background (PhD) with modern ML, LLM and MLOps practice. Track record of measurable impact across predictive maintenance, digital twins, surrogate modelling, multi-agent LLM platforms and computer vision while leading initiatives end to end from data engineering through deployment, mentoring engineers, and translating technical work into stakeholder-ready outcomes.

CORE EXPERTISE

Machine Learning & Predictive Maintenance · MLOps, Azure ML, Databricks, CI/CD
GenAI, LLM Systems, RAG & Multi-Agent Orchestration · Data Engineering & ETL at Scale
Digital Twins & Surrogate Modelling · Physics AI · Foundation Models · Computer Vision
Technical Leadership & Stakeholder Management · Mentorship & Guidance

PROFESSIONAL EXPERIENCE

Data Scientist · Damen Shipyards

Oct 2023 – Present

Gorinchem, Netherlands

- Productionised a geometric deep learning framework using a foundation model in Databricks that cut hydromechanics simulation time by 10x, materially lowering compute cost.
- Delivered a multi-agent LLM system in Azure AI Foundry for automated engineering document analysis, accelerating early-stage design workflows, via multi-agent LLM orchestration, RAG, ChromaDB and Azure OpenAI.
- Worked on an end-to-end development and Azure ML deployment of a multi-sensor predictive maintenance system, replacing manual weekly engine inspections with real-time anomaly detection.
- Built computer vision pipelines supporting autonomous sailing and vessel sea trials, validated in real-world operations.
- Defined system architecture, technical roadmap and delivery milestones while aligning 10+ stakeholders across engineering and business and managing project risk.
- Mentored junior engineers and interns through hands-on collaboration, code review and technical guidance.

Co-Founder · Dalys

Jan 2025 – Sep 2025

Deep-tech startup · part-time, alongside Damen role

- Co-founded a venture delivering AI-driven computer vision and IoT solutions for industrial clients.
- Led AI system development end-to-end, from model design to cloud infrastructure and embedded deployment.
- Shipped a production-grade quality-inspection solution for the textile industry, improving operational efficiency.

Data Scientist · Toyota Motor Europe

Apr 2023 – Sep 2023

Brussels, Belgium · applied PhD research within Toyota R&D

- Developed time-series forecasting models on large-scale vehicle telemetry (speed, acceleration, geolocation) to predict system degradation over multi-day horizons.
- Built predictive models feeding digital twins and vehicle performance analysis workflows.
- Contributed data engineering pipelines for preprocessing and dimensionality reduction (PCA) of high-dimensional sensor data, translating results into actionable insight for R&D teams.

Data Scientist (Researcher) · Hellenic Foundation for Research & Innovation

Sep 2021 – Jul 2023

Athens, Greece · funded research role, alongside PhD

- Led development of machine learning models for scaffold bone-regeneration simulation within a multidisciplinary R&D optimization (in-house) built software.
- Supervised graduate students and collaborated with cross-functional research teams on funded projects.

Patras, Greece

- Delivered multiphysics simulation projects (thermal, fluid, structural) for aerospace, oil & gas and energy clients.
- Developed Python-based shape and topology optimization algorithms, reducing structural mass while improving performance.
- Owned project execution end to end, from modelling through client delivery.

EDUCATION

PhD, Mechanical Engineering & Aeronautics · University of Patras**Jan 2021 – Jun 2025**

- Developed ML-based surrogate models for digital-twin systems, achieving up to 100× speed-up over traditional simulation.
- Designed AI frameworks for aerospace damage detection and uncertainty quantification in aircraft structures.
- Published 3 journal papers; presented at 7+ international conferences on AI, digital twins and engineering systems.

Integrated MEng (BSc & MSc), Mechanical Engineering · University of Patras**Oct 2015 – Oct 2020**

- Graduated in the top 2% of class.
- Thesis: Multiphysics computational analysis and structural optimisation of a commercial aircraft wing.

TECHNICAL SKILLS

GenAI & LLMs: RAG, multi-agent orchestration, LangChain, Semantic Kernel, Azure OpenAI (GPT-4 family), Anthropic Claude, open-source models (Llama, Mistral), Hugging Face, vector search (ChromaDB, Azure AI Search), embeddings, document intelligence, prompt engineering

Machine Learning: Deep learning, time-series forecasting, predictive maintenance, computer vision, physics-informed ML, optimisation

Cloud & MLOps: Azure ML, Databricks, Azure DevOps, Azure AI Foundry, CI/CD, Docker, Kubernetes, MLflow, model deployment & monitoring

Software: Python, FastAPI, REST APIs, Streamlit, backend–frontend integration

Data Engineering: SQL, PySpark, ETL pipelines, feature engineering, large-scale sensor data processing

Simulation: Digital twins, surrogate modelling, ANSYS, Siemens Simcenter 3D, Star-ccm+, structural optimisation

CERTIFICATIONS

Microsoft Certified: Azure Data Scientist Associate

DeepLearning.AI Certificate

Project Management Certificate

LANGUAGES

Greek — native

English — full professional proficiency

Dutch — B1, actively improving