

Panos Kolyvakis (PhD)

Data Science, Machine Learning, Software Development, Analytics, Environmental Eng., Materials Science

Personal Info

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Selected Projects

Kyndryl Policy as Code: Contributed to Kyndryl's enterprise governance capability for agentic AI, converting policies extracted from business documents into enforceable **Rego** rules evaluated through **Open Policy Agent (OPA)**. Integrated the policy enforcement layer into customer environments to govern agent decisions and tool execution with auditable, customer-specific guardrails.

Kyndryl Agentic AI Framework: Built core components of a **pure-Python agentic framework** from scratch, including function calling, **MCP servers**, an **MCP Registry and Gateway**, orchestration, tool discovery and execution, agent memory, concurrency, and observability with **OpenTelemetry (OTel)**, **OpenLLMetry**, **Prometheus**, **Grafana Mimir**, and **dashboards**.

AI-To-LaTeX: A full-stack application combining **Google Programmable Search**, **web scraping**, and **LLMs** to generate and format researched content as **LaTeX** and compile it into downloadable PDFs. (**Python**, **Flask**, **JavaScript**, **HTML/CSS**, **OpenAI GPT**)

Spartan Game Engine Contributor: Open-source contributions focused on extending the engine's physics capabilities, including flotation dynamics and movement physics. (**C++**, **Physics Simulation**, **PhysX**, **Vulkan**, **GPU Computing**)

Keyboard-SnippingTool-ToGPT: A cross-platform productivity tool that captures screen content, extracts text using **OCR**, and sends it to an **LLM API** through keyboard-driven automation and a **Tkinter GUI**. (**Python**, **PowerShell**, **Bash/zsh**, **OCR**, **APIs**, **macOS Automator**)

Work Experience

Associate Director, Global AI and Data Science

Jul 2026 - present

Kyndryl, London, United Kingdom

Leading the delivery and client integration of Kyndryl's **Policy as Code** capability. Developing a policy engine that extracts rules from business documents, converts them into **Rego**, and enforces customer-specific guardrails through **Open Policy Agent (OPA)**. Integrating the capability into customer environments with auditable policy decisions and deployments using **Terraform** and **Argo-based CI/CD**.

Senior Lead, Global AI and Data Science

Dec 2025 - Jul 2026

Kyndryl, London, United Kingdom

Built an enterprise **agentic framework from scratch in pure Python**, including function calling, an **Orchestration Engine**, dynamic tool discovery and execution, agent memory, concurrency, and configuration-driven **MCP servers**, **Registry**, and **Gateway**. Delivered end-to-end observability using **OpenTelemetry (OTel)**, **OpenLLMetry**, **Prometheus**, **Grafana Mimir**, and **dashboards**.

Senior Data Scientist AI / ML

Sept 2024 - Nov 2025

Traydstream, London, United Kingdom

I trained and productionized **ML models** for FinTech, focusing on both **text and multi-modal LLMs**. I specialized in fine-tuning **multimodal LLMs** using **full-parameter fine-tuning**, **LoRA**, and **QLoRA**. I optimized object-detection pipelines (**CNNs**) on **Azure VMs**, built efficient data pipelines, and developed **APIs** with **FastAPI/Flask** while managing **Docker** environments. Additionally, I worked on **agentic AI** for financial compliance checks, rigorously evaluated LLM outputs, and ran VM-hosted **Transformer models** using **Hugging Face** and **vLLM**.

Data Scientist. R&D

Feb 2024 - Sept 2024

Twyn Holdings Limited, London, United Kingdom

My work focused on **LLMs**, including **prompt engineering techniques** (such as **few-shot** and **chain-of-thought**) for multi-label classification problems, fine-tuning LLMs, and utilizing **LangChain** for **multi-agent systems** and **RAG pipelines**. I fine-tuned and maintained models in production on **Azure OpenAI** and **Azure Machine Learning Studio**.

Business Intelligence/ Data Analyst

Mar 2023 - Nov 2023

Xenos group Hotels, Zante, Greece

Utilised **Excel** and **applied data analytics** to room occupancy, pricing trends, and customer booking patterns, to optimise resource allocation.

Civil Engineering Teaching Fellow

Sep 2021 - Oct 2022

School of Civil and Environmental Engineering, The University of Edinburgh

Lectured, designed course material and was responsible for the academic examination in two academic courses: **Environmental Engineering** and **Water Engineering**. Delivered classes in **Engineering Mathematics** (Vector Calculus and Statistics) and **Engineering Design** courses. Engaged in **scientific programming** in wave simulations using **Python** and **finite-element methods**.

Education

PhD - The University of Edinburgh

Jul 2017 - Jul 2021

School of Chemistry (Prof. Neil McKeown)

Thesis title: Design and synthesis of porous adsorbents for water purification. Applied **regression methods** and **data modelling** using **MATLAB®** and **Origin®** software. I applied **computational techniques** to fit physisorption and chemisorption **physical models**. Investigated the effect of linearisation on the statistical error distributions in regression techniques.

BSc - The University of Edinburgh

Sep 2013 - Jul 2017

School of Chemistry (Prof. Michael Shaver)

First-class honors Award: "Outstanding Academic Performance".