JORDAN MOSHCOVITIS

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Professional Summary

- Seasoned multi-disciplinary professional with an 8-year career in scientific research and project management, and demonstrating significant technical proficiency in mathematical modeling, machine learning, quantitative methods, and advanced information retrieval techniques for large language models. Expertise includes application-layer service development and implementing complex data systems with enhanced retrieval capabilities.
- Distinctive ability to thrive in diverse team environments, demonstrated by perseverance in solving complex problems and optimizing projects independently and in collaboration with others.
- A proven record of managing and delivering innovative projects and research effectively.

Skills

Knowledge Areas:

- Advanced Physics
- Mathematical Modelling
- LLM Application Development

Programming Languages:

- Python, MATLAB, R, C, Solidity, JavaScript

Data Analysis & Machine Learning:

- Pandas, NumPy, SkLearn, PyTorch, Langchain, LlamaIndex, DSPy, HuggingFace

Other Technical Skills:

- FastAPI, Flask, SQL, MongDB, HPC(SLURM), React.js, Next.js, Docker, Streamlit, Gradio, LATEX

Work History

Founder and Chief Technology Officer, 02/2024 - Current

Symbolon.ai

- Established and lead Symbolon.ai, a consultancy at the forefront of data science and AI, specializing in delivering solutions that meet stringent privacy, security, and confidentiality standards in healthcare and NDIS sectors, compliant with APP's (Cth) and HPP's (Vic).
- Designed and deployed AI-driven products, focusing on customised solutions for complex privacy and compliance requirements using AWS cloud architectures, ensuring enhanced data protection and system integrity.
- Directed advanced RAG and LLM implementations, integrating these models into client-specific automation workflows and knowledge bases, thereby improving the sophistication of data processing capabilities.
- Oversaw the scalable deployment of AI infrastructures, utilising technologies such as FastAPI, Next.js, Node.js, AWS Lambda, and Edge functions to ensure high performance and client satisfaction.
- Led comprehensive project management, from initial concept to final deployment, emphasizing innovative system design and robust architectural solutions on AWS to maximise client outcomes.

Research Engineer, 10/2023 - Current

MMC Research

- Developed application-layer services for large language models using frameworks such as OpenAI, Llamaindex, Langchain, DSPy, and Hugging Face, focusing on sophisticated and effective information retrieval techniques like RAG and LLM.
- Implemented and optimized information retrieval systems, leveraging resources such as service-related audio transcripts to enhance data accessibility and utility across various business functions.
- Conducted R&D focused on Agentic-RAG applications, leading the integration of advanced semantic methods for complex document parsing, unstructured text transformation, including the development of hierarchical indexes, PII masking, and knowledge graphs.
- Pioneered novel semantic-based retrieval methods, significantly improving the efficiency and accuracy of information retrieval systems, contributing to internal advancements in data pre-processing, cleaning and retrieval technologies.
- Presented case studies at industry seminars, elevating brand visibility and demonstrating innovative data system integration, RAG pipelines, and information retrieval approaches.

LLM ENGINEER, 03/2023 - 10/2023

Freelance

- Contributed to a wide array of projects, including language translation platforms, web search and retrieval agents, research and report writing services, and conversational AI solutions, utilising cutting-edge technologies like Grafana, LLamaindex, Langchain, and text summarisation pipelines.
- Executed the deployment of 3+ LLM applications, leveraging FastAPI (including WebSockets and SSE), Railway, Next.js, Cloudflare CDN, and Vercel, enhancing data retrieval capabilities through the implementation of RAG and vector stores like Pinecone, Qdrant, and Chroma.
- Integrated vector storage and search solutions such as Supabase, employing hybrid search functionalities with Elasticsearch to achieve robust and scalable data retrieval.
- Applied web development stacks including Next.js 13/14, Tailwind CSS, and Supabase DB, ensuring secure application functionality with authentication protocols via NextAuth.
- Developed interactive LLM demonstrations using Gradio and Streamlit, optimising user engagement and prompt quality through specialised frameworks.
- Implemented Docker containerisation to streamline application deployments, integrating robust database technologies like SQL and MongoDB to support extensive data management.
- Utilised a comprehensive range of LLM frameworks and tools, including OpenAI, LiteLLM, and OpenRouter, alongside serverless deployment practices on AWS Bedrock and Azure to create scalable and efficient infrastructure.
- Designed and developed contextually intelligent agents using AutoGPT and ReAct, focusing on sophisticated end-to-end AI product design and real-time performance monitoring with LLMmonitor.

Data Science and Machine Learning Engineer, 03/2022 - 09/2023

MMCESP, Inovtech Engineering

- Enhanced engineering solutions using predictive analytics, conducting comprehensive ANOVA, ANCOVA, Sobol sensitivity, and regression analysis for engineering clients
- Developed a highly efficient Monte Carlo Molecular Dynamics simulation model in MATLAB for a biomedical firm
- Led end-to-end data analysis and projects for various clients, employing NumPy, Pandas, SkLearn, SkTime, Statsmodels and PyTorch, LLM models, and detailed technical reporting, fostering improved decision making.

Projects And Research Work

- Defects in Nanotextured Diamond Surfaces, MSc Thesis, 08/2019, 12/2021, Engineered a COMSOL-MATLAB simulation, integrating Finite Element Analysis, for quantification of defects in nanotextured diamond surfaces, contributing to a patented Bionic Eye prototype., Leveraged Atomic Force Microscopy (AFM), Scanning Electron Microscopy (SEM), spectral ellipsometry, and image processing (OpenCV) to validate simulations and derive topographical data from moth eye surfaces for model integration., Automated COMSOL simulation batch deployment on a HPC cluster server using Linux and SLURM and built a predictive Gaussian process regression supervised learning model with simulation output.
- Flight System and Mission Operations, Melbourne, University Space Program CubeSat, 2016, 2018, Designed and implemented critical attitude determination and control systems, contributing to successful CubeSat detumbling and tracking., Created a robust framework to collect environmental and locational data during flight, implementing telemetry protocols for successful mission operation., Devised communication strategies to transfer navigational directives and course adjustments, enhancing mission success rate and established a satellite-data retrieval system, allowing efficient data analysis and firmware updates during flight.

Education

Master of Science: Condensed Matter and Material Physics, 01/2021

University of Melbourne - Melbourne, VIC

Additional Courses: Computational Physics, Quantum Mechanics, Quantum Information, Quantum Optics, Statistical Mechanics, Mathematical modelling (MATLAB, Python, R)

Diploma: Mathematics, Pure And Applied, 01/2018

University of Melbourne - Melbourne, VIC

Additional Courses: Advanced skills in differential calculus, Graph theory, Applied mathematical modelling, Stochastic methods

Bachelor of Science: Physics, 01/2018

University of Melbourne - Melbourne, VIC

Additional Courses: Major in Physics, First Class Honours