# **Priyank Vyas**

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# PROFESSIONAL SUMMARY

AI engineer and researcher with experience in large language models, distributed systems, and machine learning applications. Demonstrated ability to design and implement ML systems for complex data processing and develop solutions that address real-world challenges. Strong background in both research and practical implementation of AI technologies.

# **EDUCATION**

### Imperial College London | London, UK

*Master of Science in Artificial Intelligence Applications and Innovation* | Sep 2024 – Present Relevant coursework: Deep Learning, Design Thinking for AI, Innovation Management, Machine Learning for Healthcare Decision-Making

### University of Waikato | Hamilton, New Zealand

Bachelor of Computing and Mathematical Science (First Class Honours) | Mar 2017 – Jun 2021 Notable coursework: Data Stream Mining (A+), Advanced Machine Learning (A), Practical Data Mining (A+), Database Practice and Experience (A+), Design and Analysis of Algorithms (A+)

#### **RESEARCH EXPERIENCE** Student Researcher, Natural History Museum | London, UK

May 2025 – Present

- Developed 3D CNN pipeline for cranial bone classification from limited paleontological data (430 samples, 51 classes), achieving 31.6% accuracy through systematic optimization and discovering inverse relationship between model complexity and performance
- Demonstrated morphological shape outperforms shape-size features for cross-species classification through comprehensive ablation studies, identifying critical data quality issues in 3D specimen digitization

Research Assistant, AI Institute, University of Waikato | Hamilton, New Zealand May 2024 – Dec 2024

- Extended machine learning library for streaming and distributed data to incorporate novel preprocessing methods, improving model performance by 15% while reducing computational requirements
- Contributed to development of aggregation method that preserves machine learning pipeline performance with reduced data volume
- Worked with distributed machine learning algorithms and large-scale data processing systems
- Research Assistant, Victoria University of Wellington | Wellington, New Zealand Aug 2023 April 2024
  - Extended Titanis concept drift detection platform with advanced streaming ML algorithms and production deployment patterns
  - Developed comprehensive documentation and tutorial platform, enabling community adoption of distributed concept drift detection methods
  - Implemented data processing workflows using Kafka and Spark for large-scale streaming ML applications

# Created open-source tutorials and guides demonstrating real-world concept drift detection scenarios

# Research Assistant, AI Institute, University of Waikato | Hamilton, New ZealandJul 2021 – Aug 2022

- Architected and developed Titanis, an open-source concept drift detection library for Apache Spark, addressing critical gaps in distributed streaming ML infrastructure
- Designed MOA integration platform enabling seamless use of Java-based research algorithms within Scala/Spark production environments
- Implemented a sophisticated coordination system for distributed prequential evaluation, ensuring algorithmic correctness across multiple nodes
- Contributed to novel distributed machine learning algorithms optimized for streaming data and concept drift scenarios

# ENTREPRENEURIAL EXPERIENCE

# Technical Advisor, DIMO DMCC (Founding member of startup) | Dubai, UAE

- Liaised with senior leadership and development team to streamline onboarding process
- Consulted with senior leadership on complex technical concepts
- Provided technical guidance during team transition period

# Chief Architect, DIMO DMCC (Founding member of startup) | Dubai, UAE

- Designed and developed technical architecture of NFT marketplace that reached trading volume of USD \$400,000 within first months of release
- Led core team of developers and external contractors to deliver platform from inception to launch
- Managed development process including maintenance and updates
- Collaborated with front-end and back-end teams to integrate third-party APIs and services

- Feb 2023 Aug 2023
- Feb 2022 Feb 2023

### **TECHNICAL SKILLS**

Programming Languages: Python, JavaScript, SQL
Machine Learning: Large Language Models, Deep Learning, Distributed Systems, Streaming ML, Fine-tuning
Frameworks: TensorFlow, PyTorch, Scikit-learn, Hugging Face
Model deployment, Version control, CI/CD pipelines
Data Technologies: Apache Kafka, Apache Spark, SQL
Development: React.js, API development, Microservices, Production deployment
Cloud Platforms: AWS, Docker

# PROJECTS

Emergency Department Triaging System using Large Language Models (Imperial College London Coursework: A)

- Designed and implemented multi-model LLM framework using DeepSeek models to process and classify medical documents and patient data
- Engineered context-aware prompts with chain-of-thought reasoning, reducing classification errors by 23% compared to traditional approaches
- Developed evaluation frameworks for LLM outputs with uncertainty quantification for safe AI-assisted decision making
- Implemented production-ready safety measures to handle AI-specific challenges including latency and variance in inference

Social Network Application (Floc) (Imperial College London Coursework: A)

- Contributed to recommendation system architecture and integration with messaging services
- Collaborated across frontend (Flutter) and backend teams for feature integration
- Worked on intelligence layer refinements to optimize recommendation algorithms

AI-Enhance Meal Planning Application (Covrd) (Imperial College London Coursework: A)

- Created hybrid system combining symbolic constraints with embedding-based preference modeling
- Engineered context-aware prompts to guide LLMs in generating meal plans
- Developed two-tower preference embedding architecture for persistent preference tracking

Distributed Machine Learning and Data Analysis Platform (Titanis) (Built while working at University of Waikato)

- Architected complete open-source software platform for distributed concept drift detection in Apache Spark ecosystem
- Implemented sophisticated coordination algorithms managing multiple concurrent data streams across distributed clusters
- Built cross-platform integration system bridging Java and Scala ecosystems for maximum developer accessibility
- Created comprehensive developer documentation and tutorial platform facilitating community adoption and contribution

### PUBLICATION

P. Vyas, T. Smith, P. Feldman, A. Dant, A. Calude and P. Patros, "Who is the Ringleader? Modelling Influence in Discourse using Doc2Vec," 2021 IEEE International Conference on Autonomic Computing and Self-Organizing Systems Companion (ACSOS-C), DC, USA, 2021

### HONORS AND AWARDS

Research & Enterprise Study Award, University of Waikato, New Zealand, November 2020 FCMS Dean's Award for Excellence, University of Waikato, New Zealand, October 2020 Golden Key Honour Society Initiate, University of Waikato, New Zealand, June 2019