



PhD Scholarship in Machine Learning for Volcanic Activity Forecasting

We are inviting applications for an exciting PhD research opportunity focused on applying state-of-the-art machine learning methods, specifically diffusion models, to forecast volcanic activities in New Zealand. The successful candidate will join our multidisciplinary volcanic hazards research group at Victoria University of Wellington and will contribute significantly to a government-funded research initiative aimed at developing robust and accurate volcanic eruption forecasts.

In this PhD project, you will develop and deploy advanced diffusion-based machine learning models to analyze datasets of multi-sensory volcano monitoring signals collected across the world. Your research will enable the identification and interpretation of patterns associated with volcanic unrest, enhancing our predictive understanding of eruption dynamics. Working in Wellington, New Zealand's capital city, provides a unique opportunity to collaborate closely with emergency management agencies and volcano scientists, participating in real-time response research during volcanic events. There will also be opportunities for fieldwork in locations across New Zealand.

We seek candidates who are highly motivated, organized, and have excellent communication skills in both verbal and written English. Applicants should hold suitable qualifications in Machine Learning, Data Science, Computer Science, or a closely related field. Strong Python programming skills are essential. Publications in top-tier conferences/journals are desirable. Previous knowledge or experience related to volcanology or geophysical phenomena would be advantageous, but is not required.

The PhD program will be supervised by Prof. Bastiaan Kleijn, Dr. Felix Yan, and Dr. Finnigan Illsley-Kemp. The scholarship provides a stipend of NZ\$35,000 per year for three years, with potential funding extension for an additional 6–12 months. All tuition fees are fully covered, along with financial support for international conference attendance and research collaboration visits in Europe.

The position is based in the School of Engineering and Computer Science at Victoria University of Wellington, with flexible start dates from October 1st, 2025 onwards.

Interested candidates are encouraged to contact Dr. Felix Yan (felix.yan@vuw.ac.nz) for informal inquiries and formal submissions. Formal applications require your CV, transcripts, Master's thesis, and publications. Applications will be reviewed after September 1st, 2025.