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Kejun Dai

Personal Statement

I am a graduate student of **Bachelor of Advanced Science (Honours) with first class Honours** from **the University of Auckland** with a GPA of **7.563**.

I specialize in **Machine Learning** and **software development** and have developed **creative thinking** and **collaboration** skills. I am currently looking for full-time **graduate data scientist** roles and **graduate software development** roles.

Skills Summary

- **Machine Learning:** Scikit-Learn, PyTorch, Pandas, Matplotlib, and Seaborn. (Python Library)
- **Software Development:** React.js, Express.js, Node.js, and MongoDB. (JavaScript)
- **Soft Skills**: Creative Thinking, Collaboration, and Self Learning.
- **Language**: Mandarin (native) and English (proficient)

Project Experience

2024 Feb – 2025 Feb

Biased Dataset Detection with Meta-learning

Honor Dissertation Research Project

- Investigate bias in Machine Learning models without using explicit sensitive attributes, which is rarely explored in Fairness Machine Learning.
- Develop a new Sensitive SBC framework to represent marginalized populations in continuous datasets without relying on sensitive attribute labels.
- Train meta-learning models that estimate risks of bias in datasets using their meta-information with accuracy that is comparable with human labelling.
- The preprint journal of the research is available *here*.

2024 July – 2024 July

Research Assistant

45H Contract Job at *the University of Auckland*

- Contribute to research presented in ICONIP 2024, which is titled “A Comparative Study of Generative Language Models and Bias Evaluation.”
- The research investigates current batch of LLM bias metrics and their effectiveness of quantifying risks in bias in LLM models.
- My responsibility is to calculate LLM bias metrics for 180k responses with PySpark and perform analysis on their distributions in 2 weeks.

2024 Feb – 2024 June

ArgusML-- ML Model creation webapp

6-member Group Assignment

- Develop a web app that allows users to train their own Machine Learning models by simply uploading their tabular data.
- It uses MERN-stack technologies, with its server running Python subprocess to train Scitkit-Learn supported ML models and use them for predictions.
- I am responsible for building model creation modules that can be invoked freely by the server to fit users’ different preferences.

2023 Nov – 2024 Feb **Bias Evaluation Framework Survey**

UoA Summer Research Scholarship

- Produce an extensive survey on the state-of-the-art ML/LLM bias evaluation frameworks.
- Perform mock experiments on each bias evaluation framework using different datasets to see their strength and weakness
- Note that developments of LLM bias evaluation frameworks are less mature than their ML counterparts.

2023 Nov – 2024 Feb **Investigate the Impact of Bias Metrics**

2-member Research Assignment

- Measuring ML models' bias metrics on the latest real-world datasets to test how effective those bias metrics are in terms of differentiating different ML models.
- Found that the choice of bias metrics does not significantly alter the rankings of ML models that are based on them.
- Responsible for designing and executing the experiments.

Education

2021 Jan – 2024 Nov **Bachelor of Advanced Science (Honour) with first class Honours**

University of Auckland

- Major in Computer Science
- Cumulative GPA of 7.563

Notable Enrollments:

- Large-Scale Software Development **A+**
- Human-Computer Interaction **A-**
- Software Tools and Techniques **A+**
- Big Data Management **A+**
- Creating Maintainable Software **A**
- Advanced Topic in Machine Learning **A-**
- Honor Research Project **A+**

Interests

- Great interest in video games. I have utilized using HarmonyX package to create mods for Unity games
- I am also interested in participating in table tennis games.

Certificates

- Certificate of Completion for Microsoft Student Accelerator New Zealand Software Development 2021 Pathway
- Certificate OF Highly Commended Achievement at University of Auckland Micro-Internship 2021.

References

- **Katharina Dost**. Supervisor of Honor Dissertation. Email: katharina.dost@ijs.si
- **Jonanthan Kim**. Supervisor of Honor Dissertation Email: j.kim@callaghaninnovation.govt.nz