JOE (JIAZHOU) LIANG

Data Scientist

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SUMMARY OF QUALIFICATION

- Experienced data scientist with proficiency in machine learning, deep learning, and data science, with comprehensive hands-on experience across data preprocessing, model design, GPU accelerated training, and hyperparameter tuning.
- Proven ability in model debugging and conducting thorough large-scale evaluations of models, utilizing diverse metrics and validation techniques to ascertain their effectiveness and reliability.
- Possessing a robust foundation in data science and a strong statistical background, providing data-driven solutions spanning diverse domains, including sociology, education, unstructured text, multivariate time series, and more.

EXPERIENCE

Research Assistant | Data Analytics

University of Toronto

Sep 2023 – Present | Toronto, Canada

- Led large-scale experiments initiatives on student performance within university-level courses, enhancing educational outcomes with the 'Scholarship of Teaching and Learning' objective.
- Conducted strategic intervention analysis with concise, visually informative reports to highlight statistically significant correlations hidden within assignments, quizzes, and exam.

Associate Software Developer

Infosys Canada

Jun 2022 – Sep 2023 | Toronto, Canada

- Designed and implemented scalable query applications for data extraction in Microsoft SQL Server and Entity Framework. Monitored database performance to keep workflows running smoothly.
- Completed business, service, and data access layers of the full stack development cycle to create customized solutions for clients using C # and with .Net Framework.

PROJECTS

ProtectYourVoice: AI-Generated Voice Detector

Jan 2024 - Apr 2024 | University of Toronto

Applied a deep learning ResNet model with transfer learning techniques to classify spectrograms of human and AI-generated voices, achieving high test accuracy in the ASVspoof2019 competition.

UnFairToS: Unfair Term Of Service Detector with LLM

Sep 2023 - Dec 2024 | University of Toronto

Integrated a fine-tuned GPT-2 model with advanced prompting techniques in GPT-4 to develop a few-shot automated tool for detecting unfair clauses in Terms of Service and rephrasing complex contractual language into clear, user-friendly terms.

SKILLS

Data Science | Machine Learning | Deep Learning | NLP | Information Retrieval

Python | SQL | Pytorch | PySpark | Scikit-Learn | Pandas | Java | Linux

EDUCATION

Master of Applied Science in Industrial Engineering

University of Toronto

Sept 2023 – Present

- Research Area: Applied Machine Learning and Data Science
- Courses: Deep Learning; Learning with Sequences and Graphs; Decision Support System; Natural Language Processing
- Teaching Assistant: MIE223 - Data Science

Bachelor of Mathematics in Statistics and Computational Math

University of Waterloo

Sept 2018 – June 2022

- Graduate with Distinction
- Upper Year GPA: 4.0/4.0
- Courses: Computational Inference; Databases Management; Statistical Learning; Applied Linear Models, Data Visualization

RESEARCH

Journal Articles

- J. Tosanwumi, **J. Liang**, D. Silver, E. Fosse, and S. Sanner, "Tscluster: A python tool for optimal temporal clustering framework," *Environmental and Planning B: Urban Analytics and City Science*, 2024.

Multivarite Time Series Clustering with Transformer

Jan 2024 - Apr 2024 | University of Toronto

Purposed a novel framework for MTS Clustering using the learnable representations in latent spaces of Transformer Encoder to achieve superior and efficient clustering results in real-world experiments.