Gansen Deng

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Summary of Qualifications

- **Expert in Machine Learning and Statistics**: Ph.D. in Statistics with strong foundation in statistical theory, natural language processing, deep learning, clustering, semi-supervised learning, active learning, and longitudinal analysis.
- **Advanced Programming Skills**: Over six years of hands-on experience conducting complex data analyses using R, Python, SQL, C++, Tableau, and Julia.
- **Effective Communicator and Collaborator**: Proven publication record across interdisciplinary health and biomedical domains; skilled at translating technical concepts for non-technical audiences.

Education

- **Ph.D. in Statistics** — Sep. 2020 – Apr. 2025
  Western University
- **Master of Science in Biostatistics** — Sep. 2019 – Aug. 2020
  Western University — *Average: 87.5/100*
- **Visiting student in Statistics** — Sep. 2018 – Apr. 2019
  Western University — *Average: 91/100*
- **Bachelor of Science in Applied Mathematics, Minor in finance** — Sep. 2015 – Jun. 2019
  South China University of Technology — *GPA: 3.72/4*

Experience

- **Statistical Consultant** — Sep. 2022 – Aug. 2024
  Western University — *Advised students and faculty on machine learning methods across a range of disciplines*
- **Teaching Assistant** — Sep. 2019 – Dec. 2024
  Western University — *Supported statistics and data science courses through tutoring, grading, and lab instruction*
- **Stock Trade Analyst (Internship)** — Jul. 2018 – Aug. 2018
  Guosen Securities — *Led a team to develop and test algorithmic trading strategies*

Research Projects

- **A Novel Distance Metric for Clustering Questionnaire Data**: Developed a custom distance metric that accounts for the unique properties of self-reported variables in questionnaire-based data, enabling more accurate similarity assessments between subjects.
- **Interpretable Clustering of Chronic Pain Patients Using Questionnaire Data**: Applied the Interpretable Clustering via Optimal Trees (ICOT) method in conjunction with the proposed distance metric to cluster chronic pain patients, ensuring model transparency and clinical interpretability.
- **Semi-supervised Clustering of Self-reported Data via Active Learning**: Introduced an semi0supervised framework that incorporates expert knowledge to guide clustering, and proposed a novel active learning strategy for selecting the most informative subject pairs for labeling.

Research Papers

- Longitudinal analysis of mucosa-associated invariant T cells in sepsis reveals their early numerical decline with prognostic implications and a progressive loss of antimicrobial functions. Immunology and Cell Biology 101.3 (2023): 249-261.
- Epilepsy-associated death in the Southwestern Ontario: A clinicopathological correlation study. Brain Pathology 33.2 (2023): e13121.
- A real time and interactive web-based platform for visualizing and analyzing COVID-19 in Canada. International Journal of Statistics and Probability, 9(5), 23-29 (2020).

Certifications

- AI for Medicine Specialization – Coursera
- Natural Language Processing with Attention, Sequence and Probabilistic Models – Coursera
- Data Visualization with Tableau Specialization – Coursera
- Introduction to Big Data – Coursera