Jiahao Zhang

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EDUCATION

University of Toronto *(Toronto, ON, 2019-present)*

Honours Bachelor of Science, Computer Science Specialist & Statistics Major

- Excellent grades with **Cumulative GPA 4.0/4.0**
- Percentage grades: **94.14%**

Academic Excellence Awards and Scholarships:

- **Dean's List Scholar** in 2019-2020 Session, 2020-2021 Session
- **University of Toronto Scholar** in 2020-2021 Session
- **New College Council In-Course Scholarship** in 2021-2022 session

SKILLS & ABILITIES

Technical Skills

- Programming languages**: Java, Python, C/C++, R, SQL, Racket, Haskell, Bash, Swift, Assembly**
- Ability to operate/use**: LaTeX, Office, NumPy, PyTorch, SciPy, OpenCV, Open3D, UML diagrams**
- Knowledgeable with **Algorithms**, **Data Structures**, **Computation Theory, Machine Learning Theory and Applications, Deep Learning, Image Understandings, Version Control and Testing**
- Strong knowledge of **Statistical** and **Data Analysis methods**
- Proficient in using **Database System**

Interpersonal Skills

- Strong **leadership** and excellent **communication and teaching skills**

Languages

- **English** (Proficient), **Chinese** (Native)

RESEARCH INTERESTS

I'm broadly interested in **machine learning** and **deep learning**, especially in 3D learning tasks, computer vision and image understandings. Besides, I am also interested in **data science** and modelling, especially for topics including **computational statistics**, **causal inference** and **statistical genetics**.

PROJECTS

Let's Make Pizza, Programmed the iOS version in **Swift**

- Made the Android and iOS version of the card game for Family Pastimes Co-operative Games
- Implemented various key functionalities and gained **organization** and **time management skills** as part of the iOS team, programmed with Xcode 10

Smart Conference System, Programmed in **Java** utilizing **Swing** and **AWT**

- Manages conferences in different situations, designed for different types of user with several functionalities and features
- Carried out the **SOLID principles of design** and **Clean Architecture** organization with **Object-Oriented Design**
- Implemented both Text GUI and Swing GUI
- Focused on the **Message System** programming, **GUI** programming and **Testing**

Analysis of Public Art in Toronto, implemented with **PostgreSQL** and analyzed with **R** utilizing tidyverse

- Analysis of real open data for public art distribution in Toronto
- Utilized **database system** with **SQL** to store information and perform queries
- In-depth further analysis with **statistical methods** including linear regression, mean, standard deviation, etc.
- Effective presentation with excellent performance

Online Education Services & Diagnostic Questions Correctness Prediction, implemented with **Python** utilizing NumPy

- Evaluate several **machine learning algorithms** using KNN, IRT model, Neural Networks and Ensemble
- Meticulous report with analysis of different algorithms and performance

- Participated in Kaggle Competition with the entire class, ranked top 10

PUBLICATIONS

- SPIDR: SDF-Based Neural Point Fields for Illumination and Deformation
  Ruofan Liang, **Jiahao Zhang**, Haoda Li, Chen Yang, Nandita Vijaykumar
  Submitted to conference, currently under review
- A Comparison of Combustion Properties in Biomass–Coal Blends Using Characteristic and Kinetic Analyses
  Yalin Wang, Beibei Yan,Yu Wang, **Jiahao Zhang**, Xiaozhong Chen, Rob J. M. Bastiaans
  MDPI, 2021.

WORK & RESEARCH EXPERIENCE

English Teacher/Tutor – *Puxin Education (Jinan, China, 2020-2021)*
- Help many students succeed in Chinese Senior High School Entrance Examination and College Entrance Examination

Computer Science/Discrete Mathematics Tutor – *Easy Education (Toronto, Canada, 2021-2022)*
- Help students understand complex topics and explain with comprehensive exercises
- Teaching subjects include **Intro to Discrete Mathematics, Intro to Computer Science**

Teaching Assistant – *CSC209H5S Software Tools and Systems Programming - University of Toronto Mississauga (Toronto, Canada, 2022)*
- Hold office hours to answer questions, grading and exam invigilating

Teaching Assistant – *GEIG1415 Introduction to Discrete Mathematics & GENS1400 Probability and Statistics* – *Feng Chia University Summer School (Toronto, Canada & Guangzhou, China, 2022)*
- Hold office hours to answer questions, grading tests and quizzes
- Hold large-size class discussions and tutorial review sessions

Research Assistant – *University of Toronto Systems & Networks Research Group (Toronto, Canada, 2022)*
- Supervised by Professor Nandita Vijaykumar
- Participated in 3D learning group, focus on **Deep Learning, Computer Graphics & Computer Vision**
- Effectively proposed methods for improving the **editability** of the NeRF explicitly in all from multiple perspectives

Research Student – *University of Toronto Dalla Lana School of Public Health (Toronto, Canada, 2022)*
- Supervised by Professor Osvaldo Espin-Garcia
- Aimed to replicate current statistical genetics methods and frameworks (e.g. LDpred2) for polygenic score prediction and extend the breath of simulations performed for PANPRS