Jiaqi (Charles) Shang

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Summary of Qualifications

- Languages and Packages: Python (PyTorch, NumPy, Pandas, Scikit-learn and SciPy), R, C++, SQL, and Bash.
- Platforms and DevOps Tools: Git, Bitbucket Pipelines, MySQL, Amazon Web Services EC2, Kubernetes, Docker.
- Experienced in project management and cross-team collaboration, with proven leadership and problem-solving skills.
- Effective communicator and independent worker, fast learner and driven to take initiative in all tasks.

Education

University of Waterloo (UW) | **Undergraduate Honours Computer Science and Statistics (Co-op)**   Sept. 2020 - Apr. 2025 (Expected)

- GPA: 91.29%, obtained Academic Excellent Standing and Term Distinction for all terms.
- Relevant Coursework: Algorithms and Data Structure, Operating System, User Interface, Introduction to Artificial Intelligence.

Awards and Scholarships

- University of Waterloo President's Research Award   2024
- University of Waterloo CS International Student Upper-Year Scholarship   2022
- University of Waterloo President's Scholarship of Distinction   2021

Internships

Vector Institute, UW - **Machine Learning Engineer, Research Assistant (NDA, expected Jan. 2025)**   Jan. 2024 - Present

- Fully implemented a novel transformer-based tabular foundation model with scaled up training pipelines using T4 datasets (1.34TB).
- Implemented data preprocessing and augmentation techniques (including paraphrasing) to enhance ML model generalization.
- Performed exploratory data analysis (EDA) on T4 and OpenML Benchmark datasets.

Aterlo Networks - **Full Stack Developer**   May. 2023 - Dec. 2023

- Developed low-latency microservices for real-time communication with 10M+ fixed wireless and fiber worldwide devices at 20+ customer sites, reducing network load by 15%.
- Initiated a unit test generation script and a tool for API message visualization, shortening review cycles by 20%.

Tesla - **Data Engineer**   Mar. 2022 - Aug. 2022

- Designed and implemented an interactive web application, transitioning 30+ recruiters from Excel to a portal managing 1,000+ applicant records, enhancing data accessibility, reducing errors by 50%, and boosting efficiency by 40%.
- Integrated 15+ advanced functionalities into the web portal, including automated weekly summaries, targeted email reminders, and comprehensive reporting tools, significantly boosting recruitment process efficiency.
- Collaborated with 5+ departments to customize and launch key features for a recruitment portal, enhancing user interface and streamlining workflow, evidenced by a 30% improvement in process efficiency.

iFlytek - **Machine Learning Engineer**   Sept. 2021 - Dec. 2021

- Developed 7 paraphrasing techniques, achieving a high paraphrase precision rate of 95.8% and a recall rate of 99.2%, while ensuring original sentence fluency and maximizing semantic alterations.
- Enhanced semantic similarity performance by exploring BERT-based models; preprocessed 1M+ data using generative models with back-translation to optimize training accuracy.

Projects

Network Solutions and Micro Services   May. 2023 - Dec. 2023

- Enhanced network polling infrastructure by handling over 50,000 network communication messages daily, ensuring data integrity and reducing processing delays by 20% across global devices.
- Deployed SNMP protocols to gather and analyze inventory and performance data from over 10,000 network devices such as routers, radios, and OLTs, resulting in a 15% improvement in network reliability and a 10% increase in operational efficiency.
- Researched 25+ device manufacturers, developing integration solutions that improved connectivity by 30% and enhanced system generalization across diverse hardware devices.

Headcount Tracking Portal   Mar. 2022 - Aug. 2022

- Developed a data processing pipeline with 17+ features, including automated data insertion and alerts, and implemented SSO for enhanced security and streamlined access.
- Created a zero-code administrative management system and an interactive dashboard with 5+ visualizations to simplify data manipulation and support non-technical users.