

Tong Su

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EDUCATION

BSc. in Computer Science Specialist and Statistics Major

09/2020 - Present

Major GPA: 3.9/4.0 CGPA: 3.8/4.0

University of Toronto

- Relevant Courses: Natural Language Computing (98), Neural Networks and Deep Learning (96), Algorithm Design & Analysis (91), Operating Systems (85)

WORK EXPERIENCE

Full Stack Developer | Angular, Django, .NET, Azure

05/2023 - Present

Northbridge

Toronto, Canada

- Collaborate with the Digital Solution Team to successfully develop a robust [insurance website](#), catering to a customer base of over 10,000 users, encompassing both **Angular** frontend and **Django** backend components
- Utilize **.NET** and **RestAPI** to integrate and process millions of customer data, facilitating smooth data flow from the frontend to the Duckcreek wave policy system
- Implemented **YAML Pipelines** in Azure to seamlessly manage the development-to-release process, including **Resource Groups**, **App Services**, **Docker** container, **Key Vault**, and **PostgreSQL** database on **Azure Cloud**, and successfully migrated the application to the new landing zone.

Data Analyst Assistant | R, PowerBI, OBIEE, Tableau, Pandas

05/2022 - 09/2023

Ontario Public Service

Toronto, Canada

- Visualized and Analyzed 10,000 posted transaction records using **Power BI** and dashboards, producing insightful reports that were presented to the Treasury Board, aiding in data-driven decision-making
- Processed and cleaned millions of datasets utilizing **Pandas** and **R** data analysis techniques to assess internal performance for the Internal Audit Branch, resulting in improved data accuracy and facilitating more effective audits

RESEARCH EXPERIENCE

Fine-tuning Pre-trained Models for Low-Resource Neural Machine Translation

01/2023 - Present

Supervisor: [Annie Lee](#), Department of Computer Science, University of Toronto

- Developed advanced strategies to enhance low-resource translation by harnessing the power of pre-trained denoising models, pivoting techniques, and transfer learning methodologies
- Conducted an in-depth analysis of **mBART** model performance, optimizing hyperparameters (adapters, patience, dataset size) and achieving superior results compared to the baseline, emphasizing the approach's effectiveness

Analyzing Social Media Usage in Sexual Assault Organizations: Image Analysis and Statistical Approaches

09/2022 - 10/2023

Supervisor: [Jia Xue](#), Faculty of Information, University of Toronto

- Utilized **Azure**-based image analysis to dissect a dataset of **200,000+** Instagram images, revealing insights into how sexual assault organizations leverage social media for promotion
- Performed thorough **linear regression** analyses in **R** to uncover patterns in Instagram engagement metrics, leading to actionable recommendations for improved outreach and increased social media impact

Impact of Compression Ratio on Convolutional Neural Network (CNN) Accuracy in Medical Imaging

09/2021 - 04/2022

Supervisor: [Pascal Tyrrell](#), Department of Statistical Science, University of Toronto

[Link to final paper](#)

- Explored the influence of image size reduction (compression and downsampling) on **CNN** accuracy for medical imaging with **PyTorch**, incorporating confidence estimation to evaluate preprocessing effects on algorithm training
- Developed and optimized image compression and downsampling models using the **Pillow** library, improving CNN performance in medical imaging through efficient preprocessing of medical images

PUBLICATIONS

- Lee, E. A., Danukarjanto, L., Huang, S., Sharmin, S., Hung, S. Y., Su, T. (2023) **Exploring Student Motivation in Integration of Soft Skills Training within Three Levels of Computer Science Programs**, SIGCSE TS 2024
- Xue, J., Shi, H., Su, T., Zhang, Q. (2023) **Analyzing Public engagement of sexual assault support organizations on Instagram in Canada: A Visual Communication Approach** (submitted), **Social Media + Society**
- Xue, J.*, Zhu, S.*, Shi, H., Su, T., Wang, Y., Zhang, Q. (2023) **Social capital and Instagram usage: Identifying sexual assault support communities via social network analysis** (submitted), **Journal of Technology in Human Services**
- Ranathunga, S. D., Nayak, S., Thillainathan, S., Huang, Su, T., Peng, X., & Lee, A. (2023) **Exploiting Domain-Specific Parallel Data on Multilingual Language Models for Low-Resource Language Translation** (submitted), EMNLP-WMT

TEACHING EXPERIENCE

STA130: An Introduction to Statistical Reasoning and Data Science

01/2023 - 12/2023

Instructor: [Joshua S. Speagle](#) (Winter 2023), [Scott Schwartz](#) (Fall 2023)

University of Toronto

- Collaborated closely with professors to design and implement dynamic statistical materials for lectures and tutorials, resulting in a **20% increase** in student engagement and significantly improved learning outcomes
- Innovatively designed and led in-person weekly tutorials and office hours, providing **comprehensive support** for 500+ students grappling with complex statistical and data science concepts

PROJECTS

Water Filter Application Development | Kotlin

- Spearheaded the development of a dynamic **Kotlin**-based application aimed at fostering water conservation awareness and showcasing a cutting-edge water filter prototype
- Functioned as both the product owner and backend developer, driving the project's success by designing and implementing **ViewModels** for various application activities

Analysis of the Flow of Visitors to Ontario Public Libraries | R, Linear Regression

- Conducted a comprehensive analysis of visitor flow patterns in Ontario public libraries utilizing **R**, resulting in actionable insights that guided library administrators in optimizing resource allocation and services
- Demonstrated expertise in data wrangling, exploratory data analysis, and **linear regression** techniques while investigating the relationship between visitor counts and other factors for Ontario public libraries

Technical Tree Application Development | Java

- Led a cross-functional team of 6 members in conceptualizing and creating an educational mobile application focused on technical tree exploration using **Java** and **Android** technologies
- Designed and implemented key features of the application, such as interactive visualizations and content organization, to enhance user engagement and usability

LEADERSHIP AND VOLUNTEER SERVICE

UTCSSA

09/2020 - Present

Marketing Dircter

- **Communicated** with various stakeholders, including the school, students, and sponsors, to ensure effective **collaboration** and promote the school and its events.
- Assisted in organizing the orientation for over **2000** new students and their parents in **5 cities** over a **3-month** period, contributing to a smooth and successful onboarding process.

Heartware Tuition Programme

05/2018 - 05/2019

Tutor Leader

- Helped primary school students in need improve their academic subjects and improved along with the whole project
- Acted as the **tutor leader** and managed a team of 10 peer tutors in one primary school
- **Communicated** with primary school students, teachers, and other tutors, practiced being patient with others, especially immature children

HONORS AND AWARDS

Dean's List Scholar, University of Toronto

2020, 2021, 2022, 2023

Deloitte Digital Difference Camp Competition, 6th Position

2022

Tableau Data Analysis competition "Data Stories of Singapore" 3rd Position

2018

SKILLS

- **Languages:** Python, JavaScript, TypeScript, HTML5, CSS3, Kotlin, Java, C#, C, SQL, R, SAS, yaml
- **Frameworks:** Tensorflow, Scikit-Learn, PyTorch, Numpy, Pandas, Pillow, Django, React, Angular, Node.js
- **Software and Tools:** Tableau, PowerBI, OBIEE, Excel, PowerPoint, Git, Visual Studio Code, Figma, Azure