**Tongtong (Frank) Liu**

liut18@wfu.edu | 1834 Wake Forest Rd, Winston Salem, NC | 743.216.1712

**EDUCATION**

**Wake Forest University** Winston-Salem, NC.

*Bachelor of Science in Computer Science and Bachelor of Science in Mathematical Business May 2023*

***GPA****:* 4.00 / 4.00*;* ***Major GPA***: 4.00 / 4.00

***Relevant Coursework****:* Operating System, Data Structures and Algorithms, Cloud Computing, Internet Protocol, Database System Management, Deep Learning, Data Mining, Software Engineering

**SKILLS/ PLATFORMS**

• **Programming Languages**: Python, Java, C, C++, C#, Unity 2D, R, JavaScript, HTML

**• Database / Cloud / OS** : MySQL,AWS, GCP, Docker, GCP, Unix, Windows

• **AI / ML Frameworks**: Tensorflow, PyTorch, OpenAI Gym, Scikit-learn, Numpy, Pandas, Seaborn, Networkx, etc.

• Native in Mandarin and Proficient in English (TOEFL 110)

• GitHub account: <https://github.com/frank47ltt> , LinkedIn account: <https://www.linkedin.com/in/frank-liu-974b161a3/>

**PUBLICATIONS**

**Liu, T.\***; McCalmon, J.\*; Lischke, C. Rahman, A. , and Alqahtani, S. (2022). On Weaponizing Actions in Multi-Agent Reinforcement Learning: Theoretical and Empirical Study on Security and Robustness, Uncertainty Artificial Intelligence 2022 (UAI 2022). **In-Review.**

Liu, X.; Shi, P.; **Liu, T**.; Alqahtani, S.; Pauca, P. and Silman, M. (2021). Robustness-driven Exploration with Probabilistic Metric Temporal Logic.In Proceedings of the 13th International Conference on Agents and Artificial Intelligence - Volume 2: ICAART, ISBN 978-989-758-484-8, pages 57-66. DOI: 10.5220/0010192100570066.

Peake, A.; McCalmon, J.; Raiford, B.; **Liu, T**., and Alqahtani, S; "Multi-Agent Reinforcement Learning for Cooperative Adaptive Cruise Control," 2020 IEEE 32nd International Conference on Tools with Artificial Intelligence (ICTAI), Baltimore, MD, USA, 2020, pp. 15-22, DOI: 10.1109/ICTAI50040.2020.00013.

**RESEARCH AND PROJECTS**

**Roller Coaster King** Winston-Salem, NC, USA

*Project Leader Dec 2021 – Jan 2022*

• Built a front-end interactive interface based on Google Map API where user can view description all roller coasters in the US by clicking different part of the map, rate the amusement park, post comments, and have an achievement system that record number of amusement park the user visited.

• Tool: React, JavaScript

**Data Mining Project** Winston-Salem, NC, USA

*Project Leader Sep 2021 – Present*

• Constructed a **machine learning portfolio** that utilized different models (KNN, Decision Tree, Neural Networks, Bayes Classifier) and techniques to help a medical company classify potential patients’ cancer pathology reports into benign or malicious, reaching a 96% accuracy and 94% recall on average

• Tool: Python, Scikit-learn, Tensorflow, Numpy, Pandas, Seaborn

**The Wakers (** [**www.thewakers.org**](http://www.thewakers.org) **)** Winston Salem, NC, USA

*Co-founder and UI design Feb 2020 – Present*

• Designed and launched **a blog-style website** to provide information of course registration, housing, meal plan, activities, and the latest news from official school websites for international students at WFU

• Launched **a WeChat Mini Program** for the function of second-hand exchange platform and food delivery service

• Achieved 200+ daily active users and 1000+ registered users

**GC Game Jam** Beijing, China

*Game Designer and Coder Jan 2021*

• Designed and implemented **a unity-based RPG game** that involves user interaction. Player is confined in a store and there are NPCs moving around. A player needs to interact with different NPCs in dialogue and purchase necessary tools in certain order to escape the store by triggering different plot events.

• Tools: Unity 2D, C#

Note: all projects can be found on GitHub repository: <https://github.com/frank47ltt?tab=repositories>

Research related code are in the organization’s GitHub

**PROFESSIONAL / LEADERSHIP EXPERIENCE**

**DataMIMO** Palo Alto, CA, USA

*Machine Learning Engineering Intern Dec 2021 – Feb 2022*

• Built data pipelines and developed web scrapping scripts in Python to fetch historical real estate data in CA area, preprocessed the data to usable formats and visualize them.

• Implemented and optimized statistical and machine learning models to conduct price valuation and time-series trend prediction for California real estate industry

• Analyzed traveler’s reviews, conducted sentimental analysis and text mining, extracted insights on the short-term rental (STR) market, and collaborated with business development in writing, outputting a business white paper that received good comments from clients

**Beijing ByteDance Network Technology Co., Ltd.** Beijing, China

*Global Talent Acquisition Partner Intern, TikTok Sep 2020 – Jan 2021*

• Assisted Global Talent Acquisition leader with end-to-end recruiting process of SEA and APEC area, including resume screening, talent sourcing, stakeholder management, networking, and campus recruitment

• Lead the monthly global recruitment alignment meeting and weekly hiring managers meeting

• Conducted 30+ first round interviews for junior talent acquisition position and shadowed 200+ intermediate/final round interviews for senior roles with hiring manager, filling in evaluation feedback

• Managed 15 headcounts and sent in total 8 full-time offers with job level higher than 2 – 1 and 4 intern offers

**The Globe** Winston-Salem, NC, USA

*Chair of Outreach Jan 2020 – Apr 2021*

• Enforced the expansion of the club and doubled membership within 6 months, making The Globe one of the largest international students professional consulting organizations on campus

• Assisted the cooperation with School of Business and Office of Personal and Career Development to plan and conduct at least one workshop per month in wide range of topics including accounting panel, data analysis, and interview

• Led the branding of WFU with Office of Global Programs and Studies to incoming international students by providing consulting services, new student orientation, and student engagement activities