Tanqiu Jiang

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Education

Stony Brook University — Stony Brook, NY
Ph.D. in Computer Science — *Aug 2023 – Present*

Pennsylvania State University, College of Information Sciences and Technology — State College, PA
Ph.D. in Informatics — *Aug 2022 – May 2023*

University of Rochester, Goergen Institute for Data Science — Rochester, NY
Master of Science in Data Science — *Aug 2020 – Dec 2021*

Lehigh University, College of Engineering — Bethlehem, PA
Bachelor of Science in Computer Engineering (Minor: Data Science) — *Aug 2016 – May 2020*

Under Review

Jiang, T., Wang, Z., Liang, J., Li, C., Wang, Y., & Wang, T. (2024). **RobustKV: Defending Large Language Models against Jailbreak Attacks via KV Eviction**. Submitted to **ICLR 2025**. [OpenReview].

Reviewer Scores: 8, 6, 6

Jiang, T., Li, C., Ma, F., & Wang, T. (2024). **RAPID: Retrieval Augmented Training of Differentially Private Diffusion Models**. [OpenReview].

Reviewer Scores: 8, 6, 5, 5

Publications

Jiang, T., Li, Y., Lin, H., Ruan, Y., & Woodruff, D. P. (2020). Learning-Augmented Data Stream Algorithms. In *8th International Conference on Learning Representations (ICLR 2020)*, Addis Ababa, Ethiopia. [pdf].

Jiang, T., Bendre, S. K., Lyu, H., & Luo, J. (2021). From Static to Dynamic Prediction: Wildfire Risk Assessment Based on Multiple Environmental Factors. *2021 IEEE International Conference on Big Data (IEEE-Big Data)*, [pdf].

Jiang, T. & Xiong, Z. (2021). Rule-Based Approach to the Automatic Detection of Individual Tree Crowns in RGB Satellite Images. *2021 IEEE International Conference on Computer Science, Artificial Intelligence and Electronic Engineering (IEEE-CSAIEE)*, pp. 132-135. [pdf].

Wang, X., **Jiang, T.**, Cai, H. II. (2021). Human epithelial-2 cell image classification using deep unsupervised learning and gradient boosting trees. *Proc. SPIE 11601, Medical Imaging 2021*. [pdf].

Experience

Stony Brook University — Stony Brook, NY
Research Assistant — *Aug 2023 – Present*

- Conduct advanced research in computer science under the supervision of Dr. Ting Wang, focusing on enhancing the robustness and privacy of machine learning models.
- Lead and manage two ongoing research projects:
  * **RobustKV: Defending Large Language Models against Jailbreak Attacks via KV Eviction**
  * **RAPID: Retrieval Augmented Training of Differentially Private Diffusion Models**

- Coordinate with a multidisciplinary team to design experiments, analyze data, and draft research manuscripts for publication.
- Present research findings at internal seminars and collaborate with external researchers to refine methodologies and approaches.

Pennsylvania State University State College, PA
Research Assistant *Aug 2022 – May 2023*

- Lead a research project developing "Unlearnable Examples" aimed at minimizing the performance of contrastive learning models by introducing adversarial noise into training images.
- Attend and present in weekly individual and group meetings with Dr. Ting Wang, Dr. Dongwon Lee, and lab mates.

University of Rochester, Goergen Institute for Data Science Rochester, NY
Teaching Assistant *Jan 2021 – Dec 2021*

- Held office hours averaging over 2 hours weekly to assist students with Python, Linux, SQL, PySpark, and R.
- Collaborated with Professors Lloyd Palum and Brendan Mort to test and refine course materials on Databricks.
- Conducted review sessions to reinforce course material and prepare students for assessments.
- Graded assignments and projects, providing constructive feedback to students.

Vista Lab, University of Rochester Rochester, NY
Student Researcher *Dec 2020 – Dec 2021*

- Led a research project on analyzing and predicting California Wildfire Incidents under the mentorship of Prof. Jiebo Luo and Hanjia Lyu.
- Integrated multiple environmental factors to assess wildfire risk using Logistic Regression, SVM, Neural Networks, etc.
- Utilized LSTM/RNN for time-series analysis to perform dynamic risk predictions.
- Co-authored a research paper published in the IEEE International Conference on Big Data.

IEEE Big Data 2021 Conference Rochester, NY
Student Volunteer / Cohost *Dec 2021*

- Cohosted the special session "S29: Contrastive Learning" alongside the session chair.
- Ensured speakers' presentations adhered to the schedule and were displayed correctly.

BASF Nanjing, China
IT-Department Intern *Summer 2018*

- Performed low-level formatting on over 900 used computers and organized an auction for their sale.
- Maintained the company's account system, particularly during personnel changes.
- Served as a translator during meetings with the German and Singapore branches.

Honors and Awards

Graham Endowed Fellowship ($4,000), Pennsylvania State University, Aug 2022

NSF Student Travel Grant ($500), IEEE-Big Data Conference, Dec 2021

Silver Medal, Kaggle: Google Landmark Retrieval 2020 (Top 3%, 16th/541)

Skills

Technical (Software): Python (Proficient), R (Proficient), SQL (Familiar), Java (Familiar), SAS (Basic), C/C++ (Basic), MATLAB (Basic)
Machine Learning Tools and Libraries: PyTorch, TensorFlow
Languages: Mandarin (Native), English (Fluent), Spanish (Basic)

Competitions

Kaggle: Google Landmark Retrieval 2020

- Extracted features from over 1 million landmark photos (736×736).
- Applied data augmentation techniques such as random cropping and resizing.
- Utilized RESNET200 and EfficientNetB6 for feature extraction, employing cosine learning rate with warm-up and ADAM optimizer.
- Implemented label smoothing and concatenated results from RESNET and EfficientNet to achieve top performance.
- Awarded Silver Medal (Top 3%, 16th/541).

Grants and Scholarships

Graham Endowed Fellowship ($4,000), Pennsylvania State University, Aug 2022

NSF Student Travel Grant ($500), IEEE-Big Data Conference, Dec 2021

Projects

Databricks US Homelessness Analysis (Sponsored by Databricks) Sep 2021 – Dec 2021

- Gathered data from various sources and scraped funding records from official websites.
- Performed exploratory data analysis using SQL and PySpark on the Databricks platform.
- Investigated the impact of policy on homelessness using Stratified Sharp-Null Test and Regression Discontinuity Design (RDD).

Automated Guitar Tuner Sep 2019 – May 2020

- Developed an automated guitar tuner using an accelerometer on an Arduino board to measure string frequencies.
- Integrated a stepper motor with the Arduino to adjust guitar tuning pegs automatically.
- 3D printed a tuning peg fitter to connect the motor to the guitar's tuning pegs.
- Programmed MATLAB and C to dynamically measure and adjust motor angles for accurate tuning.