

# Tianjie Chen

 Tianjie Chen |  Tianjie Chen |  Google Scholar |  tchen5586@gmail.com |  575-277-8181

## EDUCATION

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Aug 2024 - May 2030    Computer Science PhD at **New Mexico State University**    GPA: 4.0  
Aug 2020 - May 2024    Computer Science BS at **Pennsylvania State University**    GPA: 3.91

## WORK EXPERIENCE

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**Research Assistant - PRISM Lab, New Mexico State University**    Aug 2024 - present

- Develop training-free continual learning-unlearning algorithm that has faster runtime and uses less computation than existing ones
- Evaluate several zero-knowledge virtual machines and trusted execution environments in terms of ease-of-use, running time, and memory usage
- Develop a secure STL slicing protocol with other students that uses Intel SGX to provide secure file transfer, confidential slicing, and verifiable data deletion
- Tutored other students on preparing and practicing presentations for their PhD qualification exams, resulting in them passing their exams

**Teaching Assistant - CS Department, New Mexico State University**    Aug 2024 - present

- Built an autograder program using Python, resulting in 80% reduction in grading time
- Led twice-weekly lab sessions for 30 students, providing guidance in designing algorithms for solving problems and debugging in C++
- Support course instructor in designing and grading assignments and exams

**Research Assistant - SSET, Pennsylvania State University**    Apr 2022 - May 2024

- Visualized simulation results of a atmospheric model using line plots and contour plots using matplotlib
- Converted an atmospheric modeling program from Fortran to Python
- Developed a graphical user interface for the above program that allows users to create different atmospheric models without modifying code

**Research Assistant - Kabir Lab, Pennsylvania State University**    Aug 2021 - May 2024

- Created an explainable model for cancer prediction using TensorFlow and SHAP to achieve above 95% accuracy and better understandability
- Analyzed the performance of dimensionality reduction algorithms for RNA sequencing data and identified that autoencoder is most effective at maintaining data quality
- Tutored other students on polishing brainstorming ideas, creating solutions, and polishing manuscripts, resulting in several co-authored papers

## PUBLICATIONS

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Kabir, Md Faisal et al. (2023). "A performance analysis of dimensionality reduction algorithms in machine learning models for cancer prediction". In: *Healthcare Analytics* 3, p. 100125.

Kanjula, Karthik Reddy et al. (2023). "An edge internet of things framework for machine learning-based skin cancer detection models". In: *2023 International Conference on Machine Learning and Applications (ICMLA)*. IEEE, pp. 2167–2173.

Chen, Tianjie and Md Faisal Kabir (2024). “Explainable machine learning approach for cancer prediction through binarilization of RNA sequencing data”. In: *Plos one* 19.5, e0302947.

Khatriya, Neha et al. (2024). “Identifying Probable Neurological Disorders with Explainable Machine Learning Techniques”. In: *2024 IEEE International Conference on Big Data (BigData)*. IEEE, pp. 5006–5013.

Kim, Jinyoon, Tianjie Chen, Hien Nguyen, et al. (2024). “YOLO-SCSA: Enhanced YOLOv8 with Spatially Coordinated Shuffling Attention Mechanisms for Skin Cancer Detection”. In: *2024 International Conference on Machine Learning and Applications (ICMLA)*. IEEE, pp. 408–415.

Kim, Jinyoon et al. (2025). “Automated Image Segmentation Using Self-Iterative Training and Self-Supervised Learning with Uncertainty Scores”. In: *Recent Advances in Deep Learning Applications*. Chapman and Hall/CRC, pp. 3–21.

## PROJECTS

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### **Epidemiology of brain cancer in the US: A TriNetX database study**

[Link to Presentation](#)

Pennsylvania State University 2023 Multi-campus REU

- Evaluated demographic data from TriNetX database for its applicability in developing predictive models

### **Development of a Python GUI tool to study the atmosphere in the Arctic**

[Link to Presentation](#)

Pennsylvania State University 2023 Undergraduate Research Exhibition

- Developed a graphical user interface for an atmospheric modeling program that allows users to create different atmospheric models without modifying code

### **Integrated ML Model For Cancer Diagnosis And Prognostication**

[Link to Presentation](#)

Pennsylvania State University 2022 Multi-campus REU

- Developed a model that can perform prostate cancer prediction and patient survival prediction at the same time with above 97% classification accuracy and below 0.05 RMSE loss