Tian Tan

tiantan@arizona.edu | Personal Website

EDUCATION

University of Arizona, Tucson, AZ, U.S. Aug. 2024 - Present
- **Ph.D.** in Computer Science GPA: 4.0/4.0

Boston University, Boston, MA, U.S. Sep. 2021 - Jan. 2023
- **M.S.** in Electrical and Computer Engineering GPA: 3.76/4.0

Macau University of Science and Technology, Macau Sep. 2017 - Jun. 2021
- **B.S.** in Computer Technology and Application, **First Class Honors** GPA: 3.68/4.0 (Top 2%)

PUBLICATIONS

- **Tian Tan**, Huayi Zhang, Lei Cao.
  Data Cures Data: A Demonstration of MetaStore [Demo Video]
  Proceedings of the VLDB, Volume 18 (VLDB 2025). (Under review)
- Kan Ni, Subrota Kumar Mondal, HM Dipu Kabir, **Tian Tan**, Hong-Ning Dai.
  Toward security quantification of serverless computing
  Journal of Cloud Computing, 2024.
- Subrota Kumar Mondal*, **Tian Tan***, Sadia Khanam, Keshav Kumar, Hussain Mohammed Dipu Kabir, Kan Ni.
  Security Quantification of Container-Technology-Driven E-Government Systems
  Electronics, 2023.
- Subrota Kumar Mondal, Rui Pan, H M Dipu Kabir, **Tan Tian**, Hong-Ning Dai.
  Kubernetes in IT Administration and Serverless Computing: An empirical study and research challenges
  The Journal of Supercomputing, 2022.

Note: * above denotes equal contribution.

RESEARCH EXPERIENCE

University of Arizona Jan. 2025 - May. 2025

Teaching Assistant, Advisor: Prof. Lei Cao
- Led the writing of a demonstration paper for MetaStore, a metadata management system originally developed by other researchers; submitted to VLDB 2025 (Demo Track).
- Independently designed and implemented the system's frontend using TypeScript, and produced a complete demo video to support the paper.
- Explored a separate research idea for enhancing in-context learning (ICL) in large language models by selecting query-specific examples.
- Proposed reframing example selection as a recommendation problem, and conducted pilot experiments in Python.

Boston University Bio-Imaging & Informatics Lab Mar. 2023 - Jul. 2023 & Jan. 2022 - Jun. 2022

Research Assistant, Advisor: Prof. Bang-Bon Koo
- Developed a reinforcement learning-based bee swarm optimization method for feature selection on high-dimensional medical datasets (~800 features).
- Constructed end-to-end pipelines to model relationships between MRI diffusion metrics and cognitive scores; predicted brain age via global-local transformer networks in PyTorch.
- Automated large-scale neuroimaging workflows (HCP) with shell scripts and integrated data from sources like UK Biobank for structural and diffusion analysis.
- Established ML models for Alzheimer's diagnostics using co-training with SVM and UMAP-based visualization, achieving near state-of-the-art accuracy on regression tasks.

Macau University of Science and Technology Sep. 2020 - Jun. 2021

Research Assistant, Advisor: Prof. Subrota Kumar Mondal
- Worked on intelligent system framework design and e-governance security improvements in smart cities.

- Proposed a novel security quantification method and introduced a new intelligent system architecture, a container-driven e-government system.
- Published two articles and my thesis was awarded as one of the best papers in the college.

UC Berkeley School of Information Jun. 2020 - Aug. 2020

Remote Research Intern, Advisor: Prof. Noah Gift

- Topic: Cloud Computing for Data Analysis
- Deployed AI techniques to recognize handwritten information and submitted a project abstract.

Macau University of Science and Technology Jan. 2019 - Jun. 2019

Research Assistant, Advisor: Prof. Zhiyao Liang

- Topic: How to Utilize Artificial Intelligence in Social Life
- Investigated the use of reinforcement learning to balance an inverted pendulum on a flying drone.
- Led a team in a modeling competition to optimize smart urban traffic systems using artificial intelligence.

SKILLS

Programming: Python, MATLAB, Java, SQL, C/C++, HTML, JavaScript, LaTex

Data Science: Pandas, Numpy, Matplotlib, Sklearn, Folium, PyTorch, TensorFlow

Software: VS Code, Sublime, PyCharm, Eclipse, Dev-C++, Jupyter Notebook, Anaconda, Git, Vim, Shell, Overleaf

Languages: Mandarin, Cantonese, English

WORK EXPERIENCE

Graduate Teaching Assistant, University of Arizona, AZ, U.S. Jan. 2025 - May. 2025

Advisor: Prof. Chicheng Zhang, CSC 380 Principles of Data Science

- Hosted office hours on data science and ML topics; co-developed Python-based assignments and exams.

Graduate Teaching Assistant, University of Arizona, AZ, U.S. Aug. 2024 - Dec. 2024

Advisor: Prof. Joshua A. Levine, CSC 444 Data Visualization

- Supported students in building interactive data visualizations with JavaScript and D3.js library.

Full Stack Engineer, Glint Tech Solutions, TX, U.S. Oct. 2023 - Jun. 2024

- Tailored IT solutions for clients and formulated project plans and schedules with team members.
- Empowered clients by conducting thorough research and data analysis to deliver valuable insights on trends.

Social Media Data Analyst, Boston USWOO Realty LLC, MA, U.S. Aug. 2023 - Jan. 2024

- Analyzed social media data to discover user psychological preferences and developed products interactively.
- Harnessed artificial intelligence to create or optimize advertisements for product promotion.

Teaching Assistant, Boston University, MA, U.S. Jan. 2022 - May 2022

Advisor: Prof. Prakash Ishwar, EC 414 Introduction to Machine Learning

- Implemented machine learning algorithms in MATLAB and held weekly discussion sessions.

Electrical Engineer Intern, Han's Laser Technology Industry Group Co., Ltd., China Jul. 2019 - Aug. 2019

- Designed 3D printed models of mechanical parts and tested 3D printing slicing software.

Pre-sales Assistant Engineer Intern, Tencent Cloud Co., Ltd., China Jun. 2019 - Jul. 2019

- Contributed to the development of the first smart healthcare system in Changsha city.
- Completed industrial data statistics, demand boundary management, and product designing.

HONORS AND AWARDS

- Sci GradCollege Fellowship, University of Arizona.
- TA of the Month Recognition, University of Arizona.
- First Class Honors, Macau University of Science and Technology.
- Provincial Second Prize, 2019 China Undergraduate Mathematical Contest in Modeling (CUMCM).
- Excellence Award, The Stanford CGCP Student Writing Contest.
- 3rd Class China Regional Award, RoboMaster 2018 Robotics Competition.
- First Prize, China Adolescents Science & Technology Innovation Contest (CASTIC).
- Chairman Award of China Association for Science and Technology, CASTIC.

- Grand Prize, The “CST CUP” National Scientific Literacy Competition.
- Provincial Bronze Medal, World Mathematics Olympiad (China region).
- International Silver Award, World Robot Olympiad (WRO).
- Second Place, The 7th Changsha Sports Games Tennis Competition.
- Excellent Volunteer, Macau Youth Artistic Ability Volunteer Association.

CERTIFICATIONS

- ‘*Database Administration Fundamentals*’ certified by Microsoft Technology Associate (MTA).
- ‘*Programming using Java*’ certified by MTA.
- ‘*Programming using JavaScript*’ certified by MTA.
- ‘*Data Security*’ certified by Collaborative Institutional Training Initiative (CITI).
- ‘*Medical Campus Biomedical Researchers*’ certified by CITI.
- ‘*Artificial Intelligence*’ certified by Huawei Cloud.

ACTIVITIES

Volunteer, Chinese Red Cross Jul. 2016 - Jul. 2021

- Participated in many volunteer activities and community service to provide support to those in need.

Volunteer & Deputy Director, Macau Youth Artistic Ability Volunteer Association Sep. 2018 - Sep. 2020

- Organized volunteer activities and served as a volunteer teacher in a rural primary school (News Video).

Journalist, Changsha Evening News Mar. 2009 - Jul. 2020

- Wrote and published articles about social issues, such as educational equality, human rights, etc.

Deputy Director, Department of Finance, Tennis Club Sep. 2017 - Jun. 2019

- Managed and supervised the financial funds and organized tennis charity events.

Director & Screenwriter, “Dream Market” - HD Short Film Jan. 2018 - Dec. 2018

- Received the Excellence Award in the 2018 Campus English Short Film Competition.

INTERESTS

- **Sports**: Tennis (7 years of professional training), Basketball, Badminton, Swimming, Skateboarding.
- **Art**: Painting (proficient in watercolor and sketching, recipient of national awards).
- **Adventure**: Traveling, Hiking, Diving, Drift Activities.
- **Others**: Guitar, Baking.