Yu MIAO

Atlanta, GA 30332| Tel: +1-4045655403| email: ymiao82@gatech.edu| GitHub| LinkedIn

EDUCATION

Technion, Israel Institute of Technology	Shantou, China
Bachelor of Science in Mathematics with Computer Science	8/2019 - 7/2024
Georgia Institute of Technology	Atlanta, USA
Masters in Computational Science & Engineering (College of Computing)	8/2024-7/2026

Coursework: C Programming, Systems Programming, Data Structures, Digital Systems and Computer Structure, Combinatorics, Combinatorial Algorithms, Computer Organization and Programming, Operating Systems, Theory of Computation

RESEARCH EXPERIENCE

Research work about Accelerating Abnormal-Behavior Detection in Surveillance Video   8/2023-2/2024
Advisor: Dr. Catherine A. Haddad-Zaknoon   Technion, Haifa, Israel
- Applying group testing methods to accelerate inference time of DNN that is pre-trained to detect abnormal behavior in images.
- Innovated a strategy derived from Bshouty and Haddad-Zaknoon's techniques, based on the model developed by Weixin Liang and James Zou, emphasizing the deployment of advanced group testing models like RID, RrSD, and RsSD.
- Implemented the RrSD model, creating a simulator on a local PC, and leveraging a dummy dataset for preliminary tests.

Research work about the generalization of Whitney Decomposition in three dimensions   3/2023-9/2023
Department of Mathematics with Computer Science, Advisor: Prof. Antti Rasila   GTIIT, China
- Explored Whitney decomposition generalization in 3D through literature review, analysis, and algorithm development.
- Implemented the 2D and 3D decomposition algorithm in Mathematica, while investigating applications on efficiently approximating irregular spaces using small squares (2D) and small cubes (3D) to enhance performance efficiency.

WORKING EXPERIENCE

Student Team Member   1/2022-2/2023
Vitalerter   GTIIT, China
- Worked on developing software for analyzing sensor data in senior patients, providing real-time reports and alerts for abnormal heat, odor, and dehydration levels.
- Achieved 70%+ accuracy in heat level detection using Fine Gaussian SVM after reviewing model training code and database.
- Built APIs using the Django framework in Python.
- Conducted hardware odor level tests in a laboratory fume hood and analyzed data using PTR-MS Viewer and Python to generate curve graphs.

Software Engineer Intern   8/2022- 9/2022
Shenzhen Aerospace Technology & Innovation Co., Ltd.   Shenzhen, China
- Worked on a project to develop a charity sale fund-raising website to support the dreams of children in remote areas to learn about space science and technology.
- Collaborated with 3 developers to implement a RESTful API in Flask and tested it on Postman.
- Participated in code reviews with the product team and gained experience in writing custom and scalable code.

PROJECT EXPERIENCE

Participant of the Graduate Level Course: Advanced Mathematical Modelling (Grade:5/5)   1/2023-5/2023
Department of Applied Sciences, Tampere University   Remote
This course focused on continuous mathematical modelling methods, including partial differential equations, finite element methods, estimating parameters of the model, stability analysis, interference, multi-scale modelling, and discontinuous models.
- Collaborated with 2 teammates to complete weekly exercises, participated in peer reviewing, providing constructive feedback and exchanging ideas.
- Completed a final project, which included a LaTeX report and group presentation, on investigating the use of combining coarse and fine grids to tackle the challenges of multiscale coefficients in PDE simulations, balancing accuracy and efficiency.

Participant of AI and Education Seminar   7/2022-9/2022
Department of Robotics Institute at Carnegie Mellon University, Advisor: Prof. Jack Mostow   Remote
- Collaborated with 2 students to design a language tutoring system evaluating the impact of cooperation on language learning while comparing the pros and cons of different interventions.
- Authored a comprehensive report on our findings and delivered a PowerPoint presentation to the course mentor and peers.
- Participated in weekly lectures, summarized readings, and regularly met with the course mentor and TAs to discuss the lecture material and develop research skills.

Team Leader   8/2021-12/2021
X-Culture Project   Remote
- Collaborated effectively with 5 cross-cultural team members from diverse backgrounds to identify and analyze areas of opportunity for Novabrink, a Brazilian toy manufacturer facing challenges.

- Conducted market research and proposed sales strategies tailored to Novabrink's needs and goals of expanding their market reach and reversing sales downturns.

SELECTED PROJECTS

Railway Line Management System in C
- Implemented key features for station and line management, following ADT principles.
- Conducted unit testing and automated the build process with a Makefile.

Chinese City Song Contest System in C++
- Designed a system for managing city-based song contests, including registration, voting, and results.
- Extended functionality with generic functions and templates for efficient contest management.

TEACHING EXPERIENCE

Teaching Assistant — 8/2022-9/2024
Algebra B& Pre-Academic Math Course& Introduction to Groups& Differential and Integral Calculus 2M& PDE/H — GTIIT, China
- Graded assignments for 500+ students, offering feedback to enhance their academic performance.

Teaching Assistant — 10/2020-7/2024
Differential and Integral Calculus 1M& Introduction to Computing with Python — GTIIT, China
- Conducted weekly tutorials and provided explanations for 170+ students to enhance their understanding.

ACTIVITIES & LEADERSHIP & VOLUNTARY SERVICES

Student Ambassador, GTIIT Admissions Office — 2020-8/2024, GTIIT
- Led campus tours, answered questions, and shared my learning experiences with 100+ visitors.

Student Representative, 2019 MSE group, 2020 MCS group — 10/2019-7/2021, GTIIT
- Collected feedback and opinions from 170+ peers, working to enhance their academic experiences.
- Participated in annual meetings with 5+ school leaders and faculty to communicate feedback and represent student interests.

Student Assistant, GTIIT Research, Innovation, and Graduate Studies Office — 10/2020-7/2021, GTIIT
- Assisted with industry partner database, event organization, visitor management, and news reporting, assisted with science funding application preparation, ensuring smooth operations.

Vice Present, Model United Nations Club — 2019-8/2024, GTIIT
- Organized Model UN training for 60+ members and led a team of 8 members to participate in Model UN events for promoting the development of the club.

Participant, 2021 East Asia Model United Nations Conference — 4/2021, University of Macau
- Represented Germany on the topic of the digital technology crisis and its impact on human rights, aiming to foster collaborative problem-solving.

SKILLS

Technical:
- Programming Language: C/C++, Python, MATLAB, Mathematica, x86 assembly, HTML
- Operating System: Windows, Linux
- Machine Learning: Familiarity with common ML algorithms and libraries (e.g., scikit-learn, TensorFlow)
- Software Applications: Proficient in Microsoft Office Suite, Adobe Photoshop, and video editing tools

Language:
- Fluent in English (IELTS: Overall 7.5)
- Native Mandarin Chinese speaker

HONORS & AWARDS

- Dean's List (Top 15 %) — 2021/2022 & 2020/2021& 2022-2023 academic year
- Second Class of Chancellor 's Scholarship — 2019/2020 &2021/2022& 2020/2021 academic year
- Vice Chancellor's List (Top 5%) — 2019/2020 academic year
- First Class Academic Excellent scholarship (Top 2.5%, rank 2/107) — 2019/2020 academic year