# Furui XIAO

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## EDUCATION

**Binghamton University,State University of New York,Thomas J.Watson College of Engineering and Applied Science** **08/2024-06/2026**

- Master in Computer Science of AI track
- GPA: 3.925/4
- Already learned Core Modules: Design and Analysis of Algorithms (A), Introduction to Machine Learning (A), Programming Languages (A-), CS Professional Development (A).

**Nanjing University of Posts and Telecommunications (NJUPT Hereafter)** **09/2020-07/2024**

- BEng in Electronic and Information Engineering
- GPA: 3.15/5
- Core Modules: Machine Learning and Big Data Processing (92), Linear Algebra and Analytic Geometry (90), Algorithm and Data Structure (87), Python Language Programming and Engineering Practice (87), Probability and Stochastic Process (94), Communication Principles (92), Experiment for the Principle of Communication (92), etc.

## TECHNICAL SKILLS

- **Languages:** proficient in C, Python
- **AI Frameworks:** Keras, TensorFlow, PyTorch
- **Tools:** CAD, Omnigibson/Isaac Sim, MATLAB
- **Domain Expertise:** GANs, ResNet, Adversarial Attacks (FGSM), Reinforcement Learning
- Effective research and analytical skills showcased by independently completing and publishing a research paper
- Strong problem-solving and teamwork skills developed from projects and competitions

## RESEARCH EXPERIENCE

**Binghamton University AIR Group** **11/2024-Present**

**Supervisor:** Prof. Shiqi Zhang (Associate Professor at Binghamton University)

- Built simulation environments using Omnigibson (NVIDIA Isaac Sim) to train AI agents in complex scenarios.
- Collaborated and shared ideals with 5+ researchers to keep pace with cutting-edge advancements in robotic task planning.

**Institute of Software, Chinese Academy of Sciences Research Training Program** **07/2023-08/2023**

**Supervisor:** Prof. Lingzhong Meng (Associate Research Fellow at Institute of Software, Chinese Academy of Sciences)

- Participated in education regarding areas such as algorithm implementation, data analysis, and experimental design
- Actively engaged in studying various adversarial sample algorithms, with a particular emphasis on the Fast Gradient Sign Method (FGSM); gained proficiency in training neural networks, specifically ResNet models; delved into reinforcement learning algorithms to against ResNet, understanding their theoretical foundations, and exploring their practical implementation

**Massachusetts Institute of Technology Research Training Program** **01/2023-03/2023**

**Supervisor:** Prof. Mark Vogelsberger (Associate Professor at MIT)

- Published paper on “Handwritten Digit Generation via Improved GANs” (CONF-SEML 2023), used Keras and addressed model instability and diversity issues.
- Presented findings at international conferences, demonstrating expertise in generative models and client-facing communication.

**NJUPT Innovation and Entrepreneurship Training Program for College Students** **05/2022-06/2023**

**Supervisor:** Prof. Feng Liu (Professor at NJUPT)

- Led a 3-member team to develop a real-time KNN-based facial classification system using laser sensors.
- Efficiently coordinated and allocated tasks among team members, ensuring that everyone had clearly defined roles and responsibilities
- Won the Project Completion Certificate, recognizing the hard work and innovative solutions developed by the team

## SERVICE EXPERIENCES

**Technical Lecturer | NJUPT Students' Association for Science and Technology** **01/2020-01/2022**

- Delivered informative weekly lectures on Python programming to association members, offering technical support and troubleshooting guidance
- Designed challenging and comprehensive questions for school competitions, enhancing students' problem-solving skills and knowledge of Python
- Collaborated with other members of the association to plan and organize science and technology festivals

## COMPETITIONS

**NJUPT Electronic Design Competition** **03/2023**

- Participated in a team of three, responsible for developing car and drone programs, as well as hardware construction and control
- Split responsibilities with team members, focusing on developing tracking and image recognition capabilities for the car and quadcopter drone
- Resulted in the successful attainment of the competition's Second Prize

**Contemporary Undergraduate Mathematical Contest in Modeling** **09/2022**

- Participated as a group member in discussions and paper writing for the competition
- Collaborated with teammates to analyze and solve complex mathematical problems within a limited time frame
- Won the provincial Second Prize in Jiangsu Division, exhibiting top 15% performance among participating teams

**World Educational Robot (WER) Contest** **07/2018**

- Collaborated closely with a partner to construct hardware components and develop code to enable the robot car to perform a range of assigned tasks within the competition guidelines
- Accurately assessed challenges in real-time, iteratively adjusting the hardware and software configurations to improve overall performance
- Achieved the provincial First Prize in Jiangsu Division with top 7% performance

## AWARDS & HONORS

- NJUPT Third Class Scholarship (top 20% academic performance) 11/2022
- Second Prize in the NJUPT Electronic Design Competition 03/2023
- Provincial Second Prize in the Contemporary Undergraduate Mathematical Contest in Modeling 09/2022
- Third Prize in the NJUPT Computer Knowledge Competition 10/2020
- Provincial First Prize in the World Educational Robot (WER) Contest 07/2018