

Bowen Xu

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Place of birth: Yangzhou, Jiangsu, China * *Date of birth:* 2002-08-16

Personal Profile

Junior, Major in **Computer Science (CS)**

Advisor: Ziyu Shao

Research Interests: Bandits & Reinforcement Learning, Deep Reinforcement Learning, Network Intelligence, Distributed AI Systems.

Personal Website: Bowen Xu's personal website.

Education

ShanghaiTech University (Co-Founded by the Chinese Academy of Sciences)

Sep 2020 - Jun 2024 (Expected)

- **Undergraduate:** School of Information Science and Technology
- **GPA:** 3.78 / 4.0 (12 / 177, top 6%)
- **Honors:** Merit Student (2020-2021), Outstanding Student (2021-2022)

Curriculum

- **Mathematics:** Convex Optimization (Graduate course, A+) / Mathematical Analysis I (A) / Mathematical Analysis II (A) / Linear Algebra (A) / Numerical Optimization (A+).
- **Major:** Reinforcement Learning (Graduate course, A+) / Deep Learning (Graduate course, A) / Computer Architecture I Project (A+) / Artificial Intelligence I (A).

Research Experience

At Network Intelligence Center (NICE), ShanghaiTech University, Shanghai, China.

Jan, 2022 - Present

Dueling Bandit Algorithm Review

Jun 2022 - Oct 2022

- Conducted a literature review of existing dueling bandit algorithms.

Transformer Model Review

Dec 2022 - Feb 2023

- Review on Transformer model and BERT model (including motivation, architecture, application, further development, etc.)

Multi-Arm Bandit (MAB) with Supervised Feedback

Feb 2023 - Present

Position: Co-worker

- Designed an innovative MAB model, which combines Bandit Feedback with Supervised Feedback.
- Simulated the effect of new model in the Federated distillation scene.

Bandit Learning from Human Feedback

Mar 2023 - Present

Position: Co-worker

- Investigated the RLHF (Reinforcement Learning from Human Feedback) model in ChatGPT.

- Used human feedback to train the bandit learning model, which is a lightweight RLHF.

Application of Deep Reinforcement Learning (DRL)

Apr 2023 - Present

Position: Co-worker

- Reproduced the project of AlphaGo.
- Applied deep reinforcement learning in basic science (part of ShanghaiTech University 'AI for Science' Project).

Graph Neural Network (GNN) Bandit with Social Network

May 2023 - Present

Position: Co-worker

- Constrained Graph Neural Network Bandit Algorithm with social network.
- Graph Neural Network Bandit Algorithm with dependent arms.

Teaching Assistantship

Mathematical Analysis II (Head TA)

Feb 2022 - Jun 2022

Probability and Statistics for EECS

Feb 2023 - Present

- Organized teaching assistant work & carried out online teaching.
- Weekly in-person tutorial and after-class questions (including exercise & discussion sessions)
- Designed and graded assignments (including weekly assignments, exam paper, etc.).

Honors and Awards

- **Merit Student (top 3%)** ShanghaiTech University, 2020-2021.
- **Outstanding Student (top 7-8%)** ShanghaiTech University, 2021-2022.
- **Mathematical Contest in Modeling (MCM):** Honorable Mention, 2022.
- **Mathematics Competition of Chinese College Student:** Second Prize, 2021.
- **Mathematics Competition of Chinese College Student:** Third Prize, 2022.

Activities

- **Director of ShanghaiTech University New Year's Eve** 2020.
- **Social Practice, Group Leader (Advanced Individual), Gansu, China** 2021.
- **Aviation Industry Industrial Activities, Group Leader, Yangzhou** 2022.
- **Artificial Intelligence Industrial Practice, Shanghai** 2022.
- **Volunteer for Shanghai Marathon** 2020, 2022.

Technical skills

Programming Languages/Tools

C, C++, Python(Pytorch), Matlab, L^AT_EX, etc.