

Bowen Xu

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

Personal Profile

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

Advisor: Ziyu Shao

Research Interests: Bandit & Reinforcement Learning, Network Intelligence, Federated Learning, Deep Reinforcement Learning.

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:** (Graduate courses) 4.0 / 4.0; (Overall) 3.8 / 4.0 (12 / 177, top 6%); (Junior) 4.0 / 4.0.
- **Honors:** Merit Student (2020-2021), Outstanding Student (2021-2022).

Curriculum

- **Mathematics:** Convex Optimization (Graduate course, A+) / Matrix Computations (Graduate course, A+) / Numerical Optimization (A+) / Mathematical Analysis I (A) / Mathematical Analysis II (A) / Linear Algebra (A).
- **Major:** Reinforcement Learning (Graduate course, A+) / Deep Learning (Graduate course, A) / Online Optimization and 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

Personalized Federated Learning

Apr 2023 - Present

Position: Co-worker

- A personalized federated learning algorithm framework with online feedback (in particular, bandit feedback) and supervised feedback.

Constrained GNN (Graph Neural Network) Bandit

Apr 2023 - Present

Position: Project Leader

- Combining GNN and bandit algorithms to solve graph structure problem, and considering operational constraints like budget and fairness.

AI for Science by Deep Reinforcement Learning

Apr 2023 - Present

Position: Project Leader

- Apply deep reinforcement learning in basic science projects (e.g. protein design).

Transformer Model Review

Dec 2022 - Feb 2023

- Completed a literature review of Transformer model and BERT model.

Dueling Bandit Algorithm Review

Jun 2022 - Oct 2022

- Completed a literature review of dueling bandit algorithms.

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 Students: Second Prize**, 2021.
- **Mathematics Competition of Chinese College Students: Third Prize**, 2022.
- **Mathematics Competition of Shanghai College Students: Second Prize**, 2021.
- **Mathematics Competition of Shanghai College Students: Third Prize**, 2022.
- **National Collegiate Mathematics Competition Network Challenge: Third Prize**, 2022.

Activities

- **Director of ShanghaiTech University New Year's Eve**, Shanghai, 2020.
- **Volunteer for Shanghai Marathon** Shanghai, 2020, 2022.
- **Social Practice, Group Leader (Outstanding Individual)**, Gansu, 2021.
- **Volunteer for New Student Welcome Event**, Shanghai, 2021.
- **Aviation Industry Industrial Activities, Group Leader**, Jiangsu, 2022.
- **Artificial Intelligence Industrial Practice (Outstanding Team)**, Shanghai, 2022.
- **Volunteer for Epidemic Prevention and Control**, Shanghai, 2022.

Technical skills

Programming Languages/Tools

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