Bowen Xu

Residence: 393 Middle Huaxia Rd, Shanghai
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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, Network Intelligence, Distributed AI Systems, Deep Reinforcement Learning.

Personal Website: Bowen Xu's persoanl 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%).
- **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

Federated AIGC (AI-Generated Content) *Apr 2023 - Present*
Position: Co-worker

- Design an innovative MAB (Multi-armed Bandit) model, which combines bandit feedback with supervised feedback.
- Simulate the effect of new model in the federated distillation scene.

GNN (Graph Neural Network) Bandit with Social Network *Apr 2023 - Present*
Position: Co-worker

- Design a constrained GNN (Graph Neural Network) bandit algorithm with social network.
- Design a GNN (Graph Neural Network) bandit algorithm with dependent arms applied in social network.

Application of DRL (Deep Reinforcement Learning) *Apr 2023 - Present*
Position: Project Leader

- Apply deep reinforcement learning in basic science (e.g. protein design).
  (Part of ShanghaiTech University 'AI for Science' project)

Bandit Learning from Human Feedback (BLHF) *Mar 2023 - Present*
Position: Co-worker

- Use human feedback to train the bandit learning model.
- Lightweight version of RLHF (Reinforcement Learning from Human Feedback).

Transformer Model Review *Dec 2022 - Feb 2023*

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

Dueling Bandit Algorithm Review *Jun 2022 - Oct 2022*

- Conducted 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 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, LaTeX, etc.