Xingjian Bai

St John's college, St Giles Street
Oxfordshire, UK, OX1 3JP

[Github] [Scholar]
xingjianbai0914@gmail.com

Education

University of Oxford Oct 2020 – Present
Mathematics and Computer Science

- First Year: Distinction with Gibbs Prize (best performance in Computer Science)
- Second & Third Year: First Class
- Selected courses: Combinatorial Optimisation; Theory of Deep Learning, Stochastic Analysis.

Publications

Karwowski, J., Hayman, O., **Bai, X.**, Kiendlhofer, K., Griffin, C., Skalse, J. "Goodhart's Law in reinforcement learning." *Under review, arxiv:2310.09144.*

Bai, X., Coester, C. "Learning Augmented Sorting." *Conference on Neural Information Processing Systems (**NeurIPS**)*, 2023.

Bai, X., He, G., Jiang, Y., Obloj, J. "Wasserstein Distributional Robustness of Neural Networks." *Conference on Neural Information Processing Systems (**NeurIPS**), 2023.*

Bai, X., Ma, R., Lou, Y. "Containing Invasive Species via Cellular Automaton and AI." *Journal of Undergraduate Mathematics and Its Applications (**UMAP**)*, **American Mathematics Society (AMS) Best Paper award**, 2021.

Kirk, H. R., Jun, Y., Rauba, P., Wachtel, G., Li, R., **Bai, X.**, Broestl, N., Doff-Sotta, M., Shtedritski, A., Asano, Y. M. "Memes in the Wild: Assessing the Generalizability of the Hateful Memes Challenge Dataset." *Proceedings of the 5th Workshop on Online Abuse and Harms (**WOAH**)*, 2021.

Research Experience

Stanford Vision & Learning Lab (SVL) Jul 2023 - Present
Summer Research Intern *Supervisor: Prof. Jiajun Wu*
Topics: Employed neural-symbolic approaches to enhance the compositionality of diffusion models.

Visual Geometry Group (VGG), Oxford Feb 2023 - Present
Student Researcher *Supervisor: Prof. Christian Rupprecht*
Topics: Sped up the inference of diffusion models by implicit neural networks.

Theoretical CS Group, Oxford Mar 2023 - Aug 2023
Student Researcher *Supervisor: Prof. Christian Coester*
Topics: Proposed learning-augmented sorting algorithms that utilize erroneous predictors.

Mathematics Institute, Oxford Jul 2022 - Apr 2023
Summer Research Intern *Supervisor: Prof. Jan Oblój*
Topics: Proposed and investigated the distributional adversarial robustness of Neural Networks; proposed attacking algorithms and robust training methods using DRO sensitivity analysis.

Intelligent Computing team, Megvii Research Institute Jun 2021 - Sep 2021
Undergraduate Research Intern *Supervisor: Shuchang Zhou*
Topics: Participated in FaceBook Image Retrieval challenge; build vision transformer pipelines.

Awards & Honors

Gold Medalist, representing Oxford in ICPC World Final 2022
International Collegiate Programming Contest (ICPC)

Outstanding Winner (top 17 out of 10053 papers) 2021
37th Mathematical Contest in Modeling

Second Place in Europe 2021
MathWorks Minidrone Competition

"*Hack the hackers' hack*" award, the best out of 66 teams 2020
Oxford Hackathon

Full Score 2019
USA Computing Olympiad Open

National first place 2018
Canadian Computing Olympiad

Silver medalist 2018
Chinese National Olympiad in Informatics

First place in Beijing, 395 / 400 points 2016
Chinese National Olympiad in Informatics Provincial - middle school division

Other Experience

Oxford Student Ambassador Present
Mathematics Institute & Computer Science department

- Actively contributed to outreach and open day activities.
- Assist students from underdeveloped regions to learn maths and algorithms.

Practicals Demonstrator, Machine Learning, Oxford Present
Computer Science department

Teaching Assistant, Compilers, Oxford 2022
Computer Science department

Workshop Reviewer 2022
NAACL, Workshop on Online Abuse and Harms (WOAH)

Machine Learning for Alignment Bootcamp (MLAB) 2022
Redwood Research, Berkeley

- Intense 3-week program focusing on ML interpretability and alignment.

Project Lead 2021
Oxford Strategy Group – Digital

- Evaluated the robustness of the AI systems in JOOX (a music platform)

Skills & Interests

Programming Languages: Proficient in C++, Python; experienced in Julia, Java, Scala, Haskell.
Interested Games: Codeforces; the game of Go (3-Dan).
Hobbies: tennis, jogging, swimming, table tennis, ultimate frisbee.