

Beichen Xu

Curriculum Vitae

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Education

- 2020–2023 **B.Sc. Physics**, *University of Birmingham*, School of Physics and Astronomy
- 2023–2024 **MRes Machine Learning and Big Data in the Physical Sciences**, *Imperial College London*, Department of Physics

Experience

Vocational

- 2022 **Summer Intern**, KAVLI INSTITUTE OF COSMOLOGY CAMBRIDGE, Cambridge
- Learned some computing skills such as Linux, vim, TensorFlow. Nested sampled the data of cosmological parameters using Bayesian inference and plotted 2D graphs, as well as GIFs of the artificial intelligence training process. Discussed with a PhD students, and pulled a request to a python package named "margarine" written by him to suggest adding another objective function on Github.

Detailed achievements:

- Investigated the machine learning-enhanced Bayesian inference.
 - Used nested sampling to train the data from cosmology.
 - Used masked aggressive flow to generate the posterior of different parameters.
- Learned computing & industry standard tools.
 - Linux
 - vim & vimteractive
 - ssh
 - tmux
 - tensorflow
 - tqdm
- Studied state of the art python packages.
 - margarine
 - anesthetic

- 2021 **Summer Intern**, PURPLE MOUNTAIN OBSERVATORY, Nanjing
- Followed the supervisor to do some data analysis on Gamma Ray Bursts, learned some useful computing skills, and communicated with other group members to find better ways to analyse fit data.

Detailed achievements:

- Investigated the causes and physical mechanisms behind the formation of Gamma Ray Bursts.
- Did data analysis and fit on the data from Swift GRBs.
- Learned computing skills
 - More proficient in Python
 - iminuit

Awards

- 2018 18th Award Program for Future Scientists – Second Prize
- 2019 Physics Olympiad in Jiangsu Province, China – First prize

Computer skills

Programming PYTHON, C++, MATHEMATICA
Computing UNIX, BASH, zsh, vim, git, \LaTeX
OS Linux, Windows

Languages

Chinese Mothertongue
English Intermediate

Conversationally fluent

Publication

[1] Xu, Beichen, Jun Su, and Weiguo Wang. "An expanding balloon: a small universe." Physics Education 53.6 (2018): 065005.