

SNEH PANDYA

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EDUCATION

Northeastern University

2021-Present

Ph.D., Physics

Princeton Deep Learning Theory Summer School

July 2021

University of Illinois at Urbana-Champaign

2017-2021

B.S., Physics, Minors in Mathematics & Astronomy

GPA: 3.78/4.00

Member of Sigma Nu Fraternity

SELECTED RESEARCH

Research Assistant, High Energy Theory Group

March 2021 - September 2021

Prof. Yonatahn Kahn

Urbana, IL

- Executed numerical simulations using PyTorch to analyze the statistics of preactivations in a neural network to see how the choice of initialization distribution of neurons affects the network output.

Research Assistant, Galaxy & Black Hole Astrophysics Group

March 2019 - May 2021

Prof. Xin Liu

Urbana, IL

- Developed effective machine learning algorithms and feature engineering pipeline to weigh supermassive black holes using observational data from the Sloan Digital Sky Survey.

PUBLICATIONS

S. Pandya*, J. Lin*, D. Pratap, X. Liu, M. Kind. AGNet: Weighing Black Holes with Machine Learning. Neurips 2020 Machine Learning for the Physical Sciences. arXiv:2011.15095

S. Pandya*, J. Lin*, D. Pratap, X. Liu, M. Kind, V. Kindratenko. AGNet: Weighing Black Holes with Deep Learning. Submitted to MNRAS. arXiv:2108.07749

CONFERENCES & PRESENTATIONS

Mathematical Physics Days, *Oral Presentation (Invited)* 2021

Illinois Astrofest, *Poster (1st Place)* 2021

Neural Information Processing Systems (NeurIPS) Workshop, *Poster* (Video, Poster) 2020

Illinois Undergraduate Research Symposium, *Poster* (Video, Poster, Press) 2020

WORK

SPIN Intern & NSF REU Fellow

August 2019 - May 2021

National Center for Supercomputing Applications

Urbana, IL

- Utilized HAL supercomputing cluster to accelerate neural network training time, execute data simulation pipeline to expand training data set, and create informative visualizations for a general audience.
- Collaborated with 30+ researchers from variety of fields on effective ways to use high performance computation and machine learning, and gave several "lightning talks" about my own research.

SKILLS

Programming: Python (PyTorch, sklearn, Pandas, AstroPy), RStudio

Software: Mathematica, GitHub

Other: Scientific Outreach (high school audiences), Public Speaking, Tennis, Photography