Aditri Bhat

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Education

University of Chicago Chicago, IL
MS in Computational and Applied Mathematics June 2025

- *GPA*: 3.67/4.00
- *Selected Coursework:* Machine Learning, Scientific Computing in Python, Nonlinear Optimization

Rensselaer Polytechnic Institute Troy, NY
BS in Mathematics and Physics May 2023

- *GPA*: 3.89/4.00
- *Selected Coursework:* Numerical Computing, Linear Algebra, Management in the Digital Age

Technical Skills

Programming Languages: Python, Bash, HTML & CSS, Javascript

Python Packages: NumPy, Keras/TensorFlow, PyTorch, pandas, scikit-learn, SciPy, matplotlib

Software: Linux/Unix, Git, Github/Bitbucket, Jira, Jupyter Notebook, Knime, Excel, Google Suite, LaTeX

Technical Knowledge: Regression/Unit Testing, Technical Writing, Monte Carlo/Markov Chains, Kanban, Agile

Work Experience

Associate Nuclear Engineer Niskayuna, NY
Fluor Marine Propulsion June 2023 – Aug 2024

- Engineered automated test frameworks in Python and Bash for nuclear analysis software in an HPC environment, reducing runtime by 90% and improving release reliability within an Agile product cycle
- Authored technical specifications and user documentation to support software usability and compliance, collaborating with different analysis groups to align on requirements
- Built data processing pipelines and developed an interactive dashboard for the analysis and visualization of simulation results, improving accessibility for end users

Private Tutor Troy, NY
TroyTutors Oct 2022 – May 2023

- Taught undergraduate level physics and calculus in one-on-one sessions, working through practice problems to clarify concepts

Selected Projects

Neural Networks From Scratch (Python, Jupyter) July 2025

- Implemented full neural networks with forward and backward propagation, batched training, convolutions, and SGD and Adam optimization using only `numpy`, including examples of testing and training

Upscaling Galaxy Images with VAEs (Python, Jupyter, Tensorflow) March 2025

- Designed and trained variational autoencoders (VAEs) to generate upscaled versions of low quality galaxy images which can then be used for testing other methods of galaxy analysis

Queue Simulation (QSim) (Python, Jupyter, Sphinx) Nov 2024

- Created a package that simulates queue systems (such as the checkout at a grocery store) which provides data about wait times, queue loads, and various other parameters

2D Ising Model (Python, Jupyter) March 2022

- Constructed a representation of the Ising model which uses simulated annealing to determine the lowest potential energy state for a set of particles in random spin states