

Devansh Agarwal

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SKILLS

Programming Languages: Python, Unix shell

Tools: Cloud Computing (AWS, GCP), Git, MongoDB, InfluxDB, ELK Stack, Grafana, RabbitMQ, Docker

Frameworks & Packages: Tensorflow, PyTorch, RapidsAI, Scikit-Learn, Pandas, Scipy, Numpy, Matplotlib

EXPERIENCE

Artificial Intelligence Fellow, Insight Data Science, San Francisco, CA May 2020 - Present

- Created *DocClean*, a web app to clean up document images with crumpled backgrounds and stains.
- Enhanced Google Tesseract's accuracy up to 7% by removing dirty backgrounds using *DocClean*.
- Leveraged Tensorflow to implement and train Autoencoders and Cycle-GAN based models.
- Utilized AWS EC2 instances for training and git for system control and code reviews.

Graduate Research Assistant, West Virginia University, Morgantown, WV May 2017-May 2020

- Developed real-time data analysis pipelines with Python, CUDA for time series data from 3 world's largest radio telescopes.
- Implemented extensive monitoring systems with Elasticsearch for geospatial data, InfluxDB for time series data.
- Collected and processed 800+ TB time series data searching for astronomical transients.
- Headed a team of 20+ astronomers around the globe to search for hosts of astronomical transients.
- Published 16 articles and presented research findings at 6 conferences.

Graduate Teaching Assistant, West Virginia University, Morgantown, WV Aug 2016-May 2017

- Communicated abstract physics concepts to students of myriad backgrounds.
- Led 8 physics labs where I taught over 200 students how to conduct physics experiments.
- Formalized modelling exercises, data and solutions to the weekly data assignments.

Project Assistant, Max Planck Partner Group, Trivandrum, India Aug 2015-June 2016

- Piloted gravitational waves analysis and developed a novel unified framework to search.
- Developed a python-based framework for running large scale Monte Carlo Simulations.
- Presented research findings at the Astronomical Society of India conference with 300 participants.

PROJECTS

Deep learning for real-time detection of astronomical transients Sept 2018-Feb 2019

- Trained and developed multi-input CNN in Tensorflow for telescopes to classify real-bogus candidates in real-time with both precision and recall above 99.7%.
- Deployed at 5 largest radio telescopes around the world saving 3000+ hours from manual classification.
- Discovered 100+ new time series spikes from astronomical sources.
- Open-sourced the models at github.com/devanshkv/fetch.

EDUCATION

West Virginia University, Morgantown, USA	M.S. - PhD (Physics and Astronomy)	2020
IISER, Trivandrum, India	B.S. - M.S. (Physics and Biology)	2015