

ANANYA BHATNAGAR

Manchester M13

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Relevant Experience

The University of Manchester

September 2022 – Current

Postgraduate Research Student

Manchester, Greater Manchester

- Achieved excellent results as a postgraduate Master's student at the University of Manchester, pioneering the development of advanced deep learning models for fitting simulations from the Line Analysis Software (XCLASS) in the field of massive star formation.
- Enhanced the identification and characterization of the methanol (CH_3OH) molecule in spectra through thorough research and precise fine-tuning of deep learning models.
- Significantly enhanced the accuracy of XCLASS parameters through custom performance evaluation metrics of deep learning models, leading to highly improved fitting simulations.
- Demonstrated exceptional problem-solving skills by successfully overcoming resource limitations in the field, implementing innovative approaches that maximized learning efficiency and yielded valuable insights into complex processes.

Other Experience

The University of Manchester

September 2022 – June 2023

Graduate Teaching Assistant

Manchester, Greater Manchester

- Achieved significant improvement in second-year physics undergraduate students' data analysis, Python coding, and understanding of moderate-risk setups and procedures through effective guidance in astronomical computing and non-experimental research labs.
- Streamlined assessment and evaluation post experiments by conducting in-depth interviews and designing targeted questions, resulting in comprehensive insights into participants' abilities.
- Developed and implemented innovative feedback strategies, fostering a positive learning environment that facilitated students' improvement in report writing, experimental procedures, and result analysis leading to 80%+ grades across 90% of the batch.

RoboSlog, Ltd

July 2021 – September 2021

Robotics Engineer Intern

New Delhi, Delhi

- Played a key role in the successful development and deployment of commercially viable IoT projects utilizing diverse micro-controller technologies.
- Achieved significant advancements in sensor technologies for Arduino and ESP controllers by updating existing code, maintaining, and creating new models from the ground up.
- Demonstrated strong teamwork and coordination skills while collaborating with a 4-member team, effectively utilizing version control systems like Git to streamline modifications and task assignments.
- Effectively integrated new environments by utilizing communication protocols like UART, enabling seamless functionality and improved performance in the developed systems.

Education

University of Manchester

Sep. 2022 – August 2023

Master's by Research in Astrophysics and Astronomy
Results expected

Manchester, Greater Manchester

Guru Gobind Singh Indraprastha University

Aug. 2018 – May 2023

Bachelor of Technology in Electronics and Communications Engineering
GPA: 8.6/10

New Delhi, Delhi

Projects

Fine Tune BERT for text Classification with TensorFlow | *TF-Hub, TensorFlow, BERT*

July 2023

- Acquired skills in building TensorFlow input pipelines for text data with the tf.data API, including tokenization and preprocessing of text for BERT.
- Successfully integrated a classification head to the BERT hub.KerasLayer and fine-tuned BERT for text classification, followed by evaluating the performance of the model.

Semantic Segmentation using SageMaker | *AWS, Deep Learning, SageMaker*

July 2022

- Utilized a high level Amazon SageMaker interface estimator.Estimator() to implement a semantic segmentation algorithm on a preprocessed dataset.
- Deployed and evaluated model performance to achieve improved results.

Technical Skills

Languages: Python, C++, SQL (Postgres)

Developer Tools/Frameworks: Google Cloud Platform, Amazon Web services, PyCharm, GitHub, Docker, VS Code, Tensorflow

Libraries: pandas, Matplotlib, NumPy, scikit-learn, SciPy, Astropy

Certifications

- Deep Learning Specialization - **deeplearning.ai** (35TUC5F9CCP6)
- Docker - **Google Cloud** (ZZEHN9NVVBLH)
- Data Driven Astronomy - **University of Sydney** (G9YFYPAANMNY)
- Data Structures and Algorithms using C++ - **Udemy** (UC-324d3951-9127-4770-a3c8-787bf7944895)
- Python Programming Masterclass - **Udemy** (UC-e0e6f1b2-952d-4b36-a99a-90baa71dc092)

Leadership / Extracurricular

IEEE GTBIT Student Branch

Aug. 2019 – August 2020

Club Head

Guru Tegh Bahadur Institute of Technology

- Responsible for the management and supervision of the club.
- Organised various events by the club and student branch to ensure outreach and proper induction of new members.
- Led chapter of 30+ members to work towards goals that improve and promote community service, academics, and unity.