

Dr. Ayushi Mandlik

Data Scientist

[GitHub](#) | [LinkedIn](#) | [Portfolio](#)

 Melbourne  +61481015577  ayushimandlik09@gmail.com



EDUCATION:

Ph.D. in Astrophysics

2019-2024

Swinburne University of Technology, Australia

Master of Science in Astrophysics

2015-2017

University of Bonn, Germany

Bachelors in Physics, Math, Electronics

2012-2015

Christ University, India

LEADERSHIP SKILLS:

Machine Learning Journal Club coordinator | Swinburne University of Technology

UTMOST facility student operator | University of Sydney

Astronomy Journal Club coordinator | Swinburne University of Technology

Team Lead | Gravitational Wave Data Centre Machine Learning Hackathon

LANGUAGES:

English (Native)

Hindi (Native)

Tamil (Native)

French (Intermediate)

PROFILE:

I am a research-driven data scientist with a PhD in astrophysics, skilled in tackling business challenges. Throughout my academic journey, I took charge of journal clubs, led discussions on cutting-edge research, and actively participated in hackathons, where I demonstrated my ability to lead and collaborate effectively. My strengths include breaking down complex problems with clarity and fostering a collaborative, high-performing team environment.

EXPERIENCE:

Data analyst | Project lead

Truetel, Melbourne

Apr 2024 - Now

- Successfully transferred customer data from a raw data set used for cold calling to Zoho CRM, ensuring data integrity and seamless integration.
- Implemented an automated system within Zoho CRM for lead nurturing, which included sending confirmation emails and scheduling follow-up calls.
- Conducted detailed analysis to predict customer retention by examining industry trends, budget constraints, and the age of existing handsets, leading to more informed business decisions.
- Conducted interviews and shortlisted candidates for cold calling positions based on resume evaluations, ensuring a strong fit for the role and alignment with business objectives.

Data science intern

Australia Post, Melbourne

Jan 2024 - April 2024

- Implemented Hierarchical forecast reconciliation techniques on Australia Post parcel volume data and streamlined data flows within Dataiku DSS for efficient analysis and forecast reconciliation. Improved the MAPE by 1% after application of new reconciliation technique.
- Utilized Google Cloud Platform (BigQuery) and Tableau to analyze large datasets, derive insights, and present the results to the team with visualizations.

AWARDS:

2019–2023: Doctorate | Centre for Supercomputing and Astrophysics Scholarship: thesis project

2017–2018: Master thesis | Max Planck Institute for Radio astronomy Stipend: thesis project

2015: Bachelors | Christ University Scholarship for being in top three students

SKILLS:

Languages: Python, Bash, SQL, Latex

Packages: Pandas, Numpy, Sci-Kit Learn, Matplotlib, Scipy, Keras, StatsForecast.

Tools: Git, HPC/Cloud computing, Jupyter, Slurm, Tableau.

OS: Ubuntu, Mac OS, Windows.

Areas of expertise: Data science, data analysis, data visualization, data mining, data engineering, statistics, machine learning, Customer Resource Management.

PUBLICATIONS:

The UTMOST-NS: A fully digital, wide-field transient search facility operating at a centre frequency of 831 MHz ([link](#))

Estimating fast transient detection pipeline efficiencies at UTMOST via real-time injection of mock FRBs ([link](#))

Unearthing FRBs using Machine Learning ([link](#))

First results from the UTMOST-NS pulsar timing programme (in prep)

PhD researcher

Centre for Astrophysics and Supercomputing
Oct 2019 – Jan 2024

- Developed and optimized a real-time, GPU-enabled Convolutional Neural Network detection pipeline for the UTMOST radio telescope using Python, Keras, and TensorFlow.
- Improved on the existing system 10-fold, with a 99.99% precision.
- Injected simulated true positive candidates in real-time to perform sanity checks of the telescope, with pipeline achieving a recall rate of 96.5%.
- Conducted training and model development on the Ozstar Supercomputer which uses Slurm.
- Statistical analysis of results for varying distributions of properties of input simulation parameters for optimal performance estimations.
- Performed statistical modeling to determine best-fit parameters for detections and conducted linear regression analysis to improve telescope performance by assessing temperature dependence on phasing solutions.
- Collaborated with large-scale and multi-disciplinary research teams and presented my research at international conferences.

Masters researcher

Max Planck Institute for Radio Astronomy
Oct 2017 – Jan 2018

- Applied signal processing and noise mitigation algorithms on ~100 TB radio frequency astronomy datasets to visualize galaxies, using JURECA HPC cluster and Python-based post-processing methods.
- Analyzed Faraday depth and 3D magnetic fields of point sources in scientific images through Python-driven data analysis and convolution techniques.

Research assistant

Max Planck Institute for Radio Astronomy
2017 – 2017 (8 months)

- Created 3D visualizations to help expose underlying trends in the dataset of star forming regions in our galaxy.
- Drew data from multiple sources to reach more nuanced conclusions on distance estimations.

REFERENCE

References will be made available upon request.