Tasha Gautam, Ph.D.

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SUMMARY

– Data Scientist at GitHub with a PhD in Astronomy, combining ML and statistical expertise with strategic leadership. Experienced in guiding cross-functional teams and delivering data solutions that drive business impact.

TECHNICAL SKILLS

Programming	Python (6 yrs) • SQL (3 yrs) • Excel (5 yrs) • Git (5 yrs)
Data analytics, visualization	Pandas • PowerBI • PySpark • Apache Hive, Hadoop
Data pipeline	GCP • Azure Databricks, Data Lakehouse • Microsoft Fabric
Machine Learning	Scikit-learn • TensorFlow • NLP • Time Series Analysis

EXPERIENCE

Data Scientist - Forecasting and Capacity planning

GitHub, ON, Canada, Remote, 05/2024- Present

- Developed and productionized **ML based** ticket and capacity **forecasting models** (including XGBoost, Time-Series models), enhancing forecast accuracy by 50%, helping optimize team efficiency and **workload planning.**
- Transformed **short and long-term capacity planning** for customer support by architecting advanced data-driven solutions, providing actionable insights into resource allocation and team performance.
- Spearheaded the design and development of a **Power BI forecasting dashboard**, defining **key metrics** that enhanced **capacity planning**, **decision-making**, and **operational efficiency** for senior leadership.

Research Associate - Data Science and Project Management Expertise

National Radio Astronomy Observatory, VA, USA, On-site, 01/2023 - 11/2023

- Led a team of 8 scientists and discovered previously unknown properties of neutron stars from complex high dimensional data collected by telescopes across the globe; acquired a **$0.2M** NSF grant.
- Conducted analysis of extensive large datasets (over 10 TB), employing advanced **time-series analysis, regression techniques, and predictive modeling** to extract novel insights into the celestial object behavior.
- Developed a scalable **data pipeline** in Python to formulate new **statistical models** for 68 stars, resulting in a **150%** improvement in measurements. Used advanced statistical tests for **anomaly detection**.

Research Assistant - Data Science Expertise

Max Planck Institute For Radio Astronomy, Bonn, Germany, On-site, 08/2018 - 12/2022

- Led a project to derive new insights from **10 years** of noisy data, used **predictive modeling on time-series data** and found 3 new stellar properties, boosted previous measurements by **400%**.
- Designed **ETL data pipelines** and discovered **6** new stars through the analysis of over **100** time-series datasets, marking the first such findings by a state-of-the-art telescope.
- Led a project to discover new features of previously unknown stars in time-series datasets through statistical modeling**. Enhanced accuracy of models** through parameter optimization.
- **Boosted pipeline computing efficiency** by **24x** via parallel and distributed computing, and optimized computing resource allocation, resulting in reduced survey costs.
- Authored **13** research papers published in esteemed journals.

EDUCATION

Ph.D., Astronomy — University of Bonn (MPIfR), Bonn, Germany

2018 – 2022

MSc, Physics Indian Institute of Science Education and Research, Mohali, India
2015 – 2018

OTHER PROJECTS

Topics: *Sentiment analysis* of tweets on ChatGPT (NLP), Stock price *forecasting* (time-series forecasting), Predictive and sentiment analysis of E-commerce brand's customer reviews (NLP)
Link: https://tgautam16.github.io/

CERTIFICATIONS

Machine Learning A-Z: AI, Python & R + ChatGPT
Azure Databricks & Spark (PySpark / SQL)
The Complete SQL Bootcamp

TEAMWORK AND COMMUNICATION

Teamwork: Led data science projects with cross-functional teams of **20** • Supervised **2** interns • Representative at IMPRS • Collaborated on **13+** data-driven projects with teams of up to **50** scientists.

Communication: Delivered **20+** public talks to technical and non-technical audience of up to **40** people in international conferences • Co-supervised master's course at University of Bonn, Germany.