

DR. ROHAN R. POOJARY

Data Scientist & ML Physicist

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🌟 VISA: RWR+, German: B2-Deutsch OESD



SKILLS

Python

C++

NumPy

Pandas

Matplotlib

Scikit-learn

PyTorch

TensorFlow

NLP

LLM

HuggingFace

Linux

SQL

Bash

FastAPI

gRPC

Docker

Docker-Compose

GCP

AWS

MLFlow

CI/CD

Git

CNN

Transformers

YOLO

EXPERIENCE

ML & Physics Researcher (remote)

Prof. Shravan Hanasoge's group

📅 2025 - Present 📍 Vienna, Austria

Department of Astronomy and Astrophysics -TIFR, Mumbai

- **Analyzed and cleaned** raw IPS data from Nagoya observatory, along with OMNI data from NASA and Sun-Spot data from SILSO, Belgium using **Pandas** for further analysis.
- Built **ML pipeline (PyTorch - Autoencoder, Transformer)** to process **time-series astrophysical data** for solar wind velocity prediction.
- Working towards improving solar wind prediction accuracy from earlier models.

Academic Visitor

ITP, TU-Wien

📅 2023 - 2024 📍 Vienna, Austria

Institute of Theoretical Physics

- Worked on **machine learning** and **data science methodologies** employed in research.
- Worked on **simulations of stochastic dynamics** and those used in **statistical and mathematical physics**.

Sr. Lise Meitner Fellow

ITP, TU-Wien

📅 2020 - 2023 📍 Vienna, Austria

Institute of Theoretical Physics

- **Developed novel algorithms** for **chaotic time-series data** using stochastic simulations and entropy analysis.
- Applied **machine learning and numerical methods** to extract patterns from large datasets.
- **Published** results in **top journals**.

SUMMARY

Data Scientist with PhD in Physics and 10+ years' experience in algorithm design, machine learning, and statistical modeling. Skilled in Python, PyTorch, SQL, and data analysis with applications to time series forecasting, computer vision, YOLO, G-CNN, and NLP. Experienced in project ownership and technical visualizations, eager to apply AI expertise to solve real-world business problems.

TRAINING/COURSES

Data Science. & AI Boot Camp

Le Wagon

📅 07/2025 - 09/2025 📍 Vienna, Austria

Intensive 9-week, 9-hr Boot-camp aligned with **industry techniques**.

- **Deployed** and further improved an **app for bumblebee classification**
- **Perfect 100% score** throughout.

Intensive German Course

IBISACAM - 18Hrs/Week

📅 2023 - 2025 📍 Vienna, Austria

- **Obtained B2 certification** from OESD.

PROJECTS

Solar Wind Forecasting (on-going)

📅 2025 📍 Vienna, Austria

Predicting solar wind speeds from **raw IPS** and **OMNI data**.

- **Cleaned & processed raw data** from IPS Japan and sun-spot data SILSO Belgium.
- **Implementing Encoders** to reduce **RSME** to **~<10km/s**

Bumblebee detector

📅 09/2025 📍 Vienna, Austria

Deployed a bumblebee subspecies detection app in a week's time using **CI/CD**, **Agile** methods, **docker**, **GCP**, **FastAPI** & **Streamlit**.

- **InceptionV3** gave test accuracy of **80%**
- My branch **improved test accuracy** using **YOLOv5 + InceptionV3** to **85%**

EXPERIENCE

Research Associate

Saha Institute of Nuclear Physics

📅 2019 - 2020 📍 Kolkāta, India

Theory Division of SINP

- **Lead statistical and mathematical analysis** of data from different large-scale String Theory models.
- **Successfully validated** previous conjectures on **chaotic phenomena** by studying **data correlators** and statistical metrics like **entanglement entropy**.
- **Invited speaker** to **ICTS Bangalore** and **KIAS Seoul** to lecture on the results.

Visiting Faculty

Chennai Mathematical Institute

📅 2018 - 2019 📍 Chennai, India

- **Independently discovered** and **quantified new chaotic phenomena** by mathematically **analyzing data from rotating black-hole dynamics**, leading to a very **important international publication**.

Postdoctoral Fellow

Tata Institute of Fundamental Research

📅 2015 - 2018 📍 Mumbai, India

Department of Theoretical Physics

- **Developed novel algorithms** to compute QFT **correlators from data** in highly interacting models.
- Organized and co-founded India's first student and post-doc only conference ST4.
- Co-organized QST seminar series involving top string theorists from around the world.

CERTIFICATION

AWS Tools for AI Services: Credential ID E8YX82OL1NHG

Coursera

AWS AI Practioner: Credential ID 0IDTTRHVR7VQ

Coursera

ADDITIONAL SKILLS

Linear Algebra	Multivariate Calculus	
Probability & Statistics	Hypothesis Testing	
Stochastic Calculus	Black-Sholes-Merton models	
Differential Geometry	Algebraic Geometry	
Numerical Analysis	Time Series	Regression
Error Analysis		

PROJECTS

async gRPC + RAGFlow integration (ongoing)

📅 10/2025

- **async gRPC server-client** accessing **RAGFlow's HTTP endpoints** via **docker compose**.

EDUCATION

Ph.D, High-Energy Theoretical Physics

Institute of Mathematical Sciences, Chennai, India

📅 08/2009 - 10/2015

Masters, Physics

IIT-Kanpur

📅 09/2007 - 07/2009

Bachelors, Physics

University of Mumbai

📅 08/2004 - 07/2007

LANGUAGES

English

Native

German (B2)

Proficient

Tulu, Hindi, Marathi

Native

SELECTED PUBLICATIONS

Fast scrambling of mutual information in Kerr-AdS5

JHEP 03(2023) 099, [2210.02950]

V. Malvimat and R. R. Poojary

📅 2023

🔗 [https://doi.org/10.1007/JHEP03\(2023\)099](https://doi.org/10.1007/JHEP03(2023)099)

(Author listing alphabetical)

Rotating black holes in AdS spacetime, extremality, and chaos

Phys. Rev. D 102 (2020) 106013, [1912.12996].

A. Banerjee, A. Kundu and R. R. Poojary,

📅 2020

🔗 <https://doi.org/10.1103/PhysRevD.102.106013>

(Author listing alphabetical)

SELECTED PUBLICATIONS

Notes on melonic $O(N)$ tensor models,

JHEP 06 (2018) 094, [1707.09352].

S. Choudhury, A. Dey, I. Halder, L. Janagal, S. Minwalla and R. Poojary,

2018

[https://doi.org/10.1007/JHEP06\(2018\)094](https://doi.org/10.1007/JHEP06(2018)094)

(Author listing alphabetical)