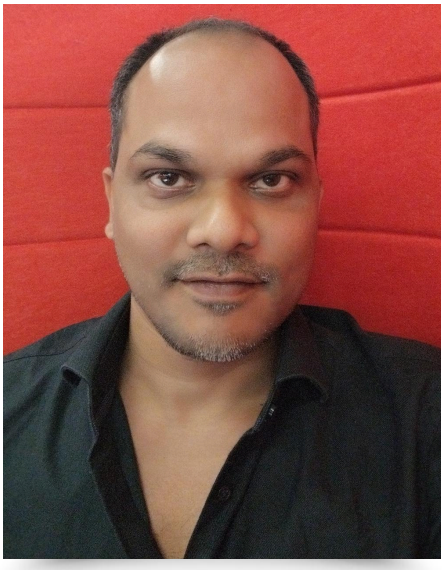
Janmajay Kumar

Master of Science in Astro and Particle Physics
Master of Science in Physics



- **Executive Summary**

  Meritocratic Research Assistant with a master's in Physics and extensive experience in numerical simulation using Python. Highly interested in data analysis, machine learning methods, programming, and particularly in Physics-Informed Neural Networks (PINN) as well as Inverse PINN (I-PINN). Regularly pursues further training proactively and independently. Solution-orientated approach, able to quickly adapt to complex challenges. Supportive team player with fluent English skills.

Mühlstraße 20 · 72074 Tübingen
janmajay@iitdalumni.com · +49 (0) 176 77680078

Appendix – Curriculum Vitae, Credentials.

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Curriculum Vitae

Personal Information

Date of birth	June 25, 1983
Nationality	Indian
MyPage	https://qed137.github.io/
Linkedn	https://www.linkedin.com/in/janmajay-kumar-82b37121/
GitHub	https://github.com/QED137?tab=repositories

Areas of Expertise

Numerical Simulation in Python, Machine Learning Methods, Computational Programming, PINN, I-PINN, Physics Simulation, Computational Physics, Simulations, Statistics, Data Analysis, Applied Mathematics, C++, R, JavaScript, Monte Carlo Simulation, Web Development

Professional Experience

07/2023 – ongoing
Continuing Training on Web Development and Machine Learning Operations as well as Working on Various Projects (*see below*)

02/2022 – 06/2023
Research Assistant | LEGEND100 Experiment *(part of an international collaboration in particle physics)*
Eberhard Karls University Tübingen, Tübingen
- Performed Monte Carlo Simulations using C++-based GEANT4 framework, simulated gamma interactions
- Developed and refined neutron tagging program
- Performed data analysis with C++-based ROOT framework and Python

08/2022 – 06/2023
Lab Supervisor | Neutron Activation Experiment
Eberhard Karls University Tübingen, Tübingen
- Supervised a laboratory course for Bachelor of Physics students

12/2017 – 07/2018
Research Assistant
Indian Institute of Technology, Delhi in India
- Focus area: Computational simulated the Schwinger Effect using Python

07/2014 – 05/2017
Teaching Professional
Bhabha Institute of Technology, Kanpur in India
- Taught Statistics with Python and Lab courses on Radiation Physics

Projects

12/2023 – 12/2023 Out of Distribution Computer Vision Challenge
10/2023 – 10/2023 Machine Learning Project: Higgs Boson Challenge on Kaggle
12/2017 – 07/2018 Project on Non-perturbative Field Theory at Indian Institute of Technology in Delhi (India)
01/2012 – 05/2013 Monte Carlo Simulation of Mass Transport Model and Applications in Python

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Education

10/2018 – 10/2021 **Master of Science in Astro and Particle Physics (M.Sc.)**
Eberhard Karls University Tübingen, Tübingen

07/2011 – 05/2013 **Master of Science in Physics (M.Sc.)**
Indian Institute of Technology, Delhi in India

03/2004 – 05/2007 **Bachelor of Science in Physics (B.Sc.)**
Tilkamanjhi Bhagalpur University, Bhagalpur in India

Continuing Training

01/2024 – 03/2024 **AWS Cloud Technical Essentials** | Amazon Web Services

10/2023 – 12/2023 **IBM: Web Development with HTML, CSS, JavaScript** | Coursera

08/2023 – 10/2023 **Deep Learning** | DeepLearning.AI

- Convolutional Neural Networks
- Sequence Models
- Improving Deep Neutral Networks: Hyperparameter Tuning, Regularization and Optimization
- Neutral Networks and Deep Learning
- Structuring Machine Learning Projects

06/2023 – 08/2023 **Machine Learning** | Stanford University & DeepLearning.AI

- Supervised Machine Learning: Regression and Classification
- Advanced Learning Algorithms
- Unsupervised Learning, Recommenders, Reinforcement Learning

07/2023 – 07/2023 **Java Programming: Solving Problems with Software** | Duke University & Coursera

Additional Skills and Qualifications

Languages English, business fluent
German, basic knowledge written and spoken (A2)

Computer skills C++, Python, TensorFlow, PyTorch, Java, Linux, GEANT4, MATLAB, R, Git/GitHub

References **Prof. Dr. Josef Jochum** | Eberhard Karls University Tübingen
josef.jochum@uni-tuebingen.de

Dr. Shahid Khan | CERN, Geneva
shahid.khan@unige.ch

Tübingen, March 11, 2024

Janmajay Kumar