

DYUTIDEEPTA BANERJEE

Deep Tech Professional

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SUMMARY

Deep Tech professional with a strong foundation in Physics, specialising in image and data interpretation, science-based modelling and advanced analytics. Passionate about creating innovative solutions across sectors, including spacetech, defence, healthcare, robotics, automotive, new energy, and material sciences. I combine deep scientific insight and Physics fundamentals with cutting-edge AI and vision technologies to solve complex, real-world challenges. As a clear communicator, I bring experience in engaging stakeholders across industry & academia - presenting internationally, driving cross-domain discussions, automating workflows, and delivering impactful solutions to local and global clients.

EXPERIENCE

Artificial Intelligence Research Intern

[Project link](#)

MathWorks: Customer Success Engineering Group

11/2022 - 05/2023 Munich, Germany

Company specialising in software for technical computing and model-based design

- Established a work pipeline for standardised satellite imagery with Multispectral & Digital Terrain Model for morphological analysis using JAXA's SELENE image datacubes of the KAGUYA mission.
- Designed and developed a MATLAB AI application for efficient multispectral image preprocessing like segmentation, annotation, and enhancement to create gold-standard training data for Lunar sinuous rille features.
- Adapted CNN models using deep and transfer learning, achieving above 95% prediction accuracy.
- Partnered with international research teams at the *Max Planck Institute for Solar System Research* and the *University of Padova*.
- The work pipeline enables cross-domain applications in the geospatial, medical, and manufacturing sectors.
- Ongoing engagement with research teams for publication.

Visiting Fellow

International Center for Theoretical Sciences Tata Institute of Fundamental Research

07/2019 - 04/2020 Bangalore, India

A research institution focused on advancing fundamental and interdisciplinary science

- Developed simulation models for turbulent flows applicable in various fields
- Established an experimental mechanism for validating Newtonian drag models
- Designed gcodes and 3D printed lab apparatus for experiments

Cross-Platform Solutions Specialist - Freelance Contractor

Johnson & Johnson

06/2024 - Present Bangalore, India

A multinational corporation that develops medical devices, pharmaceuticals, and consumer packaged goods

- Engaged with global stakeholders, defined solutions for business needs and conducted cross-platform testing
- Delivered actionable improvements for product lookup system
- Reduced fix turnaround by 40% through enhanced processes

Automation Specialist - Freelance

Toriox PRJ Packaging Pvt Ltd

09/2024 - 12/2024 Bangalore, India

A startup that specialises in inventory management

- Designed and implemented edge-based Python modules for real-time batch QR code processing
- Achieved 80% reduction in manual intervention for low-latency production environments

EDUCATION

MSc Physics of Data

University of Padua

10/2020 - 04/2024 Padua, Italy

BSc (Hons) Physics, minor in Data Science

Azim Premji University

08/2016 - 08/2019 Bangalore, India

KEY ACHIEVEMENTS

Winner of ERODEM Research Grant 2024

Winner of Erasmus + Traineeship Grant 2022

Poster Publication at 11th European Lunar Symposium 2023 [View Poster](#)

AI-based detection of Lunar Sinuous rilles: A comparison with manual detection methods

First-authored Manuscript under review by Elsevier

Focused on modular vision pipelines for multi-dataset analysis in Lunar data. Co-authored by Max Planck Institute, University of Padua & MathWorks.

CERTIFICATIONS

Finance for Non-finance Professionals 2025
Rice University by Coursera [View Certificate](#)

Deep Learning Onramp 2023
MathWorks [View Certificate](#)

Introduction to Cosmology 2017
M. P. Birla Institute of Fundamental Research

SKILLS

Physics & Computational Modelling
Strong foundation in Physical sciences with expertise in simulations, algorithm development and imaging

AI & Data Science
Proficient in Deep Learning Frameworks, Predictive Analytics, Data Wrangling, Data processing, Computer Vision and Model Deployment

Programming & Tools
Skilled in Python, MATLAB, R, TeX, CAD, SQL, MS Office, Git, Bash, Jira, learning C++

Soft Skills
Excellent public speaking and team leadership skills, financial and business acumen

INVITED SPEAKER

Seminar Speaker for the Applicability of AI in Planetary Feature Detections

[Max Planck Institute for Solar System Research](#)

05/2023 Göttingen, Germany

Scientific Ehibitor for Buffon's Mathematical Model

[Indian Institute of Science](#)

02/2020 Bangalore, India

SELECT TECHNICAL CONTRIBUTIONS

Encrypted QR generator with Decryption Algorithm [Project Link](#)

An open source project: A Python-based toolkit for encrypted QR code generation, enhancing data security using Tkinter for GUI and Fernet-based decryption system.

Built an AI-Powered Ed-tech Platform for NASA Space Apps Hackathon 2024 [View Platform](#)

Created automated data pipelines for acquiring NASA exoplanetary datasets
Deployed NLP/LLM modules for improved data processing

VOLUNTEERING & LEADERSHIP

Academic Coach for graduate-level Physics & Mathematics

[Classgap by GoStudent](#)

01/2024 - 12/2024 Global

Communication Coach

[Center for Linguistics, University of Padua](#)

12/2021 - 12/2022 Padua, Italy

Certified Peer Counsellor for Mental Wellness

[Azim Premji University](#)

07/2017 - 04/2019 Bangalore, India

Special-ed Teacher Volunteer for the underprivileged at an NGO

[Parikrma Humanity Foundation](#)

07/2017 - 12/2017 Bangalore, India

LANGUAGES

English Native   

Hindi Native   

Italian Beginner   

German Beginner   

Bengali Mother Tongue 