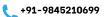
DYUTIDEEPTA BANERJEE

Deep Tech Professional



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https://github.com/DyutideeptaB

https://www.linkedin.com/in/dyutideepta-banerjee/

SUMMARY

Deep Tech professional with a strong foundation in Physics, specialising in image & data interpretation, science-based modelling and advanced analytics. Passionate about creating innovative industrial 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 work to local and global clients.

EXPERIENCE

Artificial Intelligence Research Intern

Project link

MathWorks: Customer Success Engineering Group &

= 11/2022 - 05/2023 Munich, Germany

- 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 aeospatial, medical, and manufacturing sectors.
- Ongoing engagement with research teams for publication.

Visiting Fellow

International Center for Theoretical Sciences Tata Institute of Fundamental Research &

m 07/2019 - 04/2020 Bangalore, India

- Developed simulation models for turbulent flows in Newtonian fluids having applicable in various fields
- Established an experimental mechanism for validating drag models and conducted motion analysis using videographic data
- Designed goodes and 3D printed lab apparatus for experiments

Cross-Platform Solutions Specialist - Freelance Contractor Johnson & Johnson 🔗

Pangalore, India **6** 06/2024 - 08/2025

- 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 Pangalore, India
- Designed and implemented edge-based Python modules for realtime 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

6 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

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 multidataset 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 Certificate**

Deep Learning Onramp 2023 **MathWorks Certificate**

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

Programming with Python University of Michigan by Coursera Certificate

R for Data Science 2016 Miscrosoft by edX **Certificate**

INVITED SPEAKER

Seminar Speaker for the Applicability of AI in Planetary Feature Detections

Max Planck Institute for Solar System Research ∅

5 05/2023

• Göttingen, Germany

Scientific Ehibitor for Buffon's Mathematical Model Indian Institute of Science $\,\mathscr{O}\,$

indian institute of Scien

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 <u>View Platform</u>

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 Classaap by GoStudent \mathscr{O}

■ 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 $\mathscr O$

SKILLS

Physics & Computational Modelling

Strong foundation in Physical sciences with expertise in Al for simulations, algorithm development and image analysis

Al & Data Science

Proficient in Deep Learning Frameworks,
Predictive Analytics, Data Wrangling, Data
processing, Statistical Analysis, Data
interpretation, Computer Vision, Model
Deployment, Scripting, Automation, Technical
Documentation and Quality Analysis

Programming & Tools

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

Soft Skills

Excellent communication, public speaking, presentation and team leadership skills, financial and business acumen

LANGUAGES

