DYUTIDEEPTA BANERJEE

From Physics to Product | Applied AI, Imaging & System Optimization

📞 +91-9845210699   ✉️ dyutideepta.banerjee@gmail.com   🔗 https://www.linkedin.com/in/dyutideepta-banerjee/

📍 Bangalore, India, 560077   💻 https://github.com/DyutideeptaB   🌐 https://dyutideepta.is-a.dev

Data analytics professional with a strong foundation in Physics and Data Science, specialising in AI-driven solutions for vision, decision intelligence and automation. Experienced in advanced analytics, predictive modelling, and machine learning, with a proven ability to quickly learn and effectively apply new vision & data analysis tools. Skilled at delivering actionable insights from complex data and collaborating across teams to drive data transformation for scientifically researched Physics - models for informed decision-making.

WORK EXPERIENCE

Product & Workflow Analyst (UX, QA & Stakeholder Solutions) - Contracted to Johnson & Johnson 🔗
Bangalore, India | Jan 2025 - Present
Trainee - Software Intergration Services Inc. (Sisincorp) 🔗
Bangalore, India | Jun 2024 - Dec 2025

- Maintained Johnson & Johnson's global product lookup system—including web, mobile apps, and internal product database, **integrated with CDL and GS1 resolver** for precise product traceability.
- Collaborated with **international stakeholders and end users across time zones** to resolve feature requests and production issues via **Jira**, Teams, and direct support.
- Leveraged JQL to triage and monitor issue trends; translated business needs into **Figma wireframes** and developer-ready specifications.
- **Streamlined workflows and led manual QA testing**, identifying and resolving critical bugs, reducing fix turnaround by **40%**.
- Shared updates with external partner companies through **Power BI dashboards**, supporting seamless **analytics integration and cross-company data alignment**.

Automation & UI Specialist: Batch QR Code System (Freelance)- Toriox PRJ Packaging Pvt Ltd 🔗
Bangalore, India | Sep 2024 - Dec 2024

- Created Python scripts for **real-time data input, storage, and retrieval**, improving efficiency and **reducing manual effort by 80%**.
- Developed QR code generation and data screening **modules integrated into the client's software**.
- Enhanced data security and processing speed with **edge-based solutions**.
- Delivered **reliable, production-ready code**, earning strong client satisfaction.

Artificial Intelligence Intern - MathWorks: Customer Success Engineering Group 🔗 **Project link:** 🔗
Munich, Germany | Nov 2022 - May 2023

- Designed and developed a MATLAB **AI application** with custom functions for efficient **multispectral image preprocessing and automated feature extraction**.
- Trained **CNN** models from scratch, achieving **>95% classification accuracy**, surpassing benchmark AI systems.
- Established a **gold-standard dataset pipeline, increasing model training efficiency by 40%** and enabling **cross-domain applications** in geospatial, medical and manufacturing sectors.
- Partnered with international research teams at the **Max Planck Institute for Solar System Research** (MPI 🔗), leveraging expertise in **Physics and AI-driven computer vision** in planetary science.

Visiting Fellow - International Center for Theoretical Sciences Tata Institute of Fundamental Research: Fluid Mechanics Laboratory 🔗
Bangalore, India | Jul 2019 - Apr 2020

- Developed **Physics-based computational models**, applicable to AI-driven simulations in robotics, aerodynamics and turbulent mechanics.
- Conducted experimental validation of Newtonian fluid drag models, improving **prediction accuracy by 90%**.
- **Designed** gcodes and **3D printed lab apparatus** for experimental work.

EDUCATION

MSc in Physics of Data 🔗
University of Padua, Padua, Italy | Oct 2020 - Apr 2024
Dissertation: AI-based detection of Lunar Sinuous rilles: A comparison with manual detection methods
Select Projects:

- AI in Medicine: Paediatric bone age estimation using X-ray datasets
- Network Science for Smart Governance: Models to analyse global trends from social media

BSc (Hons) in Physics & minor in Data Science 🔗
Azim Premji University, Bangalore, India | Aug 2016 – Aug 2019
   Dissertation: Bristle Bots as a Minimal Model of Directed Motion
   - Developed 3D-printed adaptive microbots for real-time motion analysis

SELECTED TECHNICAL CONTRIBUTIONS

Encrypted QR generator with Decryption Algorithm, *Bangalore, India | May 2025*
   A Python-based toolkit for encrypted QR code generation, secure data encoding, and visual data screening. Includes a Tkinter GUI for input, QR generation with/without background designs, and a Fernet-based decryption system. Ideal for product packaging, secure tagging, and data tracking workflows.

Celestial Quest: AI-Powered Ed-tech Platform for Astrophysics, *Ahmedabad, India | Oct 2024* 🔗
   Developed Python scripts for automated NASA data scraping, integrated with LLaMA-based NLP/LLM pipelines. Built UI templates and exported HTML modules for email notifications, designed the platform logo, and contributed to public deployment using AWS for scalable, real-time access. This was a team project for the ***NASA Space Apps Hackathon 2024***. 🔗

AWARDS & CERTIFICATIONS

- **Finance for Non-Finance Professionals** | *Rice University by Coursera (2025)* 🔗
- **Deep Learning Onramp Certification** | *MathWorks (2023)* 🔗
- **Introduction to Cosmology Certification** | *M.P. Birla Institute of Fundamental Research (2017)*
- Winner of **ERODEM Research Grant** | *University of Padua (2024)*
- Winner of **Erasmus Plus Traineeship Grant** | *Erasmus+ (2022)*

SKILLS

Core Competencies:
- **Physics & Computational Modelling:** Strong foundation in Physical sciences with expertise in simulations, hyperspectral imaging, and algorithm development
- **AI & Data Science:** Deep Learning, Predictive Analytics, Model Deployment, Statistical Modelling, Data Wrangling, Computer Vision, Data Processing, Machine Learning frameworks (TensorFlow, PyTorch)
- **Programming & Tools:** Python, MATLAB, R, Pandas, Spark, Power BI, MS Office, QGIS, Tkinter, CAD
- **Version Control & Agile Methodologies:** Git, Bash, Jira, Scrum
- **Design & Visualisation:** Figma, Canva
- **Financial & Business Acumen**

Soft Skills:
Public Speaking, Team Leadership, Cross-Disciplinary Collaboration

Languages:
   English (Native), Hindi (Native), Bengali (Mother Tongue), Italian (Beginner) & German (Beginner)

INVITED TALKS & TECHNICAL PRESENTATIONS

Conference Speaker, 11th European Lunar Symposium, *Padua, Italy | Jul 2023* 🔗
"*AI for Lunar remote sensing data analysis*"

Seminar Speaker, Max Planck Institute for Solar System Research, *Göttingen, Germany | May 2023* 🔗
"*Applicability of AI in feature detection using hyperspectral satellite imagery*"

Scientific Presenter, Indian Institute of Science (IISC), *Bangalore, India| Feb 2020* 🔗
   "*Experimental presentation for Buffon's Mathematical Model*"

VOLUNTEERING, OUTREACH & LEADERSHIP

Academic Coach for graduate-level Physics & Mathematics | *Classgap by GoStudent (Jan 2024 – Dec 2024)* 🔗
Communication Coach | *Center for Linguistics, University of Padua, Italy (Dec 2021 – Jan 2022)* 🔗
Certified Peer Counsellor for Mental Health | *Azim Premji University, Bangalore, India (Jul 2017 – Apr 2019)* 🔗
Special-ed teacher for the underprivileged at NGO | *Parikrma Humanity Foundations, Bangalore, India (Jul 2017 – Dec 2017)* 🔗