YOGESHWAR BOOPATHY

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A Data Science and Artificial Intelligence enthusiast with a keen interest in Deep Learning, Computer Vision, with a solid academic foundation and practical experience in machine learning and data science

EDUCATION

Joint M.Sc in Data Science & Artificial Intelligence 2023 - 2025
Indian Institute of Technology Madras, Chennai, India
University of Birmingham, Birmingham, United Kingdom
IITM CGPA: 8.74 UOB GRADE: Distinction

B Tech in Electronics & Communication Engineering (Major), Computer Science Engineering (Minor) 2019 - 2023
Puducherry Technological University, Puducherry, India
CGPA: 9.73

Higher Secondary - HSS 2017 - 2019
St.Patrick Matric Higher Secondary School, Puducherry, India
Percentage: 92.3%

High School - SSLC 2010 - 2017
St.Patrick Matric Higher Secondary School, Puducherry, India
Percentage: 96.8%

SKILLS

Programming Languages	C, C++, Python, SQL, Bash, HTML, CSS, JavaScript
Design Tools	Adobe Illustrator, Photoshop, Figma
Data Science & Machine Learning	Numpy, Pandas, Matplotlib, Scipy, OpenCV, Pytorch
Tools & Frameworks	GitHub, MS Office, Django, LaTeX

EXPERIENCE

Research Intern Nov 2023 - Jan 2024
Center for Responsible AI (CERAI), Chennai, India

- Explored and tested explainable AI techniques such as **GradCam**, **GradCam++**, **LIME**, and **SHAP** as part of a **META-funded project** to verify their effectiveness in healthcare domains.
- Prepared a detailed literature review analyzing the advantages and drawbacks of these methodologies for different healthcare scenarios.

Project Intern Feb 2023 - May 2023
ERNET India (Ministry of Electronics & IT, GOI), Bangalore, India

- Collaborated with **IISc Bangalore** to design and build an ultra-reliable, low-latency deterministic network for tactile cyber-physical systems using **MPLS**, significantly reducing latency requirements by nearly 90%.
- Collaborated closely with **IIT-M** and **SETS** to perform link management and comprehensive data analytics for the **Metro Area Quantum Access Network (MAQAN)** between IIT-M and ERNET.
- Built an interactive, user-friendly dashboard using Python Dash with clear visualizations for valuable insights.

Data Science & ML Intern May 2021 - July 2021
National Centre for Polar and Ocean Research (NCPOR), Goa, India

- Analyzed real-time synoptic weather data from Bharathi Station, Antarctica, to forecast future conditions.

- Designed and implemented a robust data pipeline using Python and **Django** to efficiently parse, process, and represent large datasets in a dynamic, interactive dashboard.
- Ensured seamless data flow from raw inputs to final visualizations, enabling real-time data analysis and providing stakeholders with actionable insights.
- Employed techniques such as **LSTMs**, **ARIMA**, and **Boosting** to perform time series forecasting.

PROJECTS

Exo-centric to Ego-centric View Translation using Gaussian Splatting

- Applied **3D Gaussian Splatting** for novel view synthesis, optimizing it for ego-centric view generation from third-person inputs, and enhanced the rendering process to handle significant viewpoint changes with quality.
- Developed a probabilistic sampling approach for optimization and used it to train and evaluate models on a custom dataset, successfully achieving accurate novel ego-centric views from exo-centric perspectives.
- Trained **Diffusion Models** and **Parallel GANs** to perform Exo-centric to Ego-centric View translation.

Stereo Depth Estimation for Wheel Alignment

- Calibrated a stereo camera and used it to capture wheel images, estimating the depth of the wheel at different points using Python and OpenCV with **95%** accuracy to determine wheel alignment.
- Estimated the toe angle for touchless wheel alignment for automobiles using the obtained depth information in collaboration with **MANATEC**, enhancing vehicle alignment processes and improving overall performance.

MRI Segmentation

- Employed techniques such as **Otsu Thresholding**, **Erosion**, **Dilation**, and **Connected Components** to segment MRI images of the brain, achieving **96%** and **98%** accuracy for 2D and 3D methods, respectively

CERTIFICATIONS & ACCOMPLISHMENTS

- Ranked among the top **5** students in my department during my undergraduate studies, consistently demonstrating academic performance
- Awarded the P**ostgraduate Professional Development Award** from the University of Birmingham in recognition of completing over 50 hours of diverse and impactful activities towards professional growth, continuous learning and volunteering activities
- Participated in the **BEAR Challenge** where I built and optimised deep learning models for **cyclone classification** and **retinal nerve segmentation** and completed the nerve segmentation challenge with the highest Jaccard Index among all the teams
- Machine Learning, Databases & SQL for Data Science with Python - Coursera
- Fundamentals of Data Science - NVIDIA
- Python for Data Science and Machine Learning Bootcamp, Django with Data Science - Udemy

VOLUNTEERING

Student Casual Worker — University of Birmingham

Panel Volunteer — University of Birmingham

Technical Advisor on Sewage Block Detection — Public Works Department, Pondicherry

Co-ordinator — ENCInfo - A Technical Symposium

HOBBIES

Lawn tennis, Badminton, Digital Art, Reading Novels, Table Tennis