Arnab Dey

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Education

2020–2024 **Ph.D. in Computer Science**, *Biomechanics Capture: Deep learning-based real-time human biomechanics capture*, Marie Curie fellowship at University Cote d'azur, Nice, France.
- Led a pioneering project to revolutionize real-time 3D human biomechanics capture, focusing on pose, shape, appearance, and dynamics through cutting-edge neural rendering techniques (NeRF, Gaussian Splatting).
- Collaborated with academic partners at Brown University and industry partner Youdome in Monaco.

2017–2020 **MSc in Computer Science and Engineering**, *Specialized in Artificial Intelligence*, Politecnico di Milano, Milan, Italy.
- Mastered AI, Machine Learning, Data Science, and Computer Vision through intensive, project-based coursework.
- Developed a robust analytical foundation in mathematics, probability, statistics, and critical thinking.

2013–2017 **B.Tech in Computer Science and Engineering**, *West Bengal University of Technology*, Kolkata, India, Solid foundation in software engineering and image processing.

Experience

2022–2024 **Visiting Researcher**, **Brown University**, Providence, USA.
- Collaborated with a diverse, fast-paced research team in a cross-functional environment.
- Developed deep learning algorithms using Tensor Field Networks and NeRF for 3D human model canonicalization.

2021–2021 **Teaching Assistant**, **Université Côte d'Azur**, Nice, France.
Conducted 3D machine vision course, effectively communicating complex concepts to master's students.

2020–2020 **Machine learning Intern**, **Next Industries S.R.L.**, Milan, Italy.
- Developed ML applications for wearable devices and optimized motion gesture recognition algorithms.
- Collaborated with cross-functional teams to optimize hardware and software.

2019–2020 **Data Scientist Intern**, **UniCredit Services S.c.p.a.**, Milan, Italy.
- Automated manual financial processes using data-driven approaches.
- Implemented an OCR Web service with pre- and post-processing modules (NLP) to improve OCR quality.
- Worked on statistical analysis, object detection, document classification, and entity recognition/extraction.

Skills

Programming	Python(expert), C/C++(prior experience), Java(prior experience), Matlab(proficient)
DevOps	Docker, Git, GCP, AWS
Database	Proficient in MongoDB, MySQL, and SQL.
ML, CV & DS tools	Pytorch, Pytorch Lightning, Tensorflow, Keras, MLflow, Scikit-learn, OpenCV, Pandas, NLTK, Spacy, Matplotlib, Jupyter Notebook.
Quantitative	Regression analysis, Hypothesis testing, Time-series analysis, Machine learning techniques including pattern recognition, and NLP.
Data Analysis	Statistical modeling, Data mining, probability, and statistics.
Languages	English (Proficient); Hindi & Bengali (Native); French (Beginner); Italian (Beginner)

Awards

2022	Best poster award	*EuroGraphics 2022, Reims*
2022	Winner of E-Health Creathon	*Innovation Center for Entrepreneurship of University Cote d'Azur*
2019	Developed official IOI mobile application	*The International Olympiad in Informatics*

Publications

2023 **DiVA-360: The Dynamic Visuo-Audio Dataset for Immersive Neural Fields**, *CY Lu, P Zhou, A Xing, C Pokhariya, A Dey, et al.*, Preprint, arXiv:2307.16897.

2023 **PNeRF: Probabilistic Neural Scene Representations for Uncertain 3D Visual Mapping**, *Y Ahmine, A Dey, AI Comport*, Preprint, arXiv:2209.11677.

2022 **Mip-NeRF RGB-D: Depth-Assisted Fast Neural Radiance Fields**, *Dey, A. and Ahmine, Y. and Comport, A.I.*, Journal of WSCG, Volume 30 pages 34-43, DOI:10.24132/JWSCG.2022.5.

2022 **RGB-D Neural Radiance Fields: Local Sampling for Faster Training**, *Dey, Arnab and Comport, Andrew I.*, Eurographics 2022 - Posters, DOI: 10.2312/egp.20221001.