

ADVITH KRISHNAN

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EXPERIENCE

Research Intern
ETH Zurich

August 2024 - Present
Zurich, Switzerland (Remote)

- Outlined the design of AI algorithms for adaptive neuroprosthetic limbs alongside [Dr. Elisa Donati](#) & [Dr. Giacomo Valle](#) under the Neural Bionics Lab & Institute of Neuroinformatics; developments aim **to enhance mobility for over 300 amputees within Zurich hospitals**.

Research Team Head
Odyssey Lab

December 2023 - Present
Tamil Nadu, India

- Improvised 3 Visual Question Answering (VQA) + Temporal Action Localization (TAL) AI pipelines for indicating danger in CCTV footage **through effective prompt engineering**.
- Combined Explainable AI (XAI) methods to evaluate generative multimodal LLMs (GPT 3.5 Turbo, GPT 4 Turbo, GPT 4o & Gemini 1.5 Pro) in perceiving dangerous scenarios.
- Collaborated alongside 9 established researchers in vision-language research, and **led a team of 6 interns**; Submitted the complete work to a **large computer vision conference**.

AI Engineer
MIOT International Hospital

December 2023 - July 2024
Tamil Nadu, India

- Implemented a few-shot deep learning pipeline for shoulder-bone loss estimation & identification of shoulder dislocation type **utilizing only 60 patient scans for training**.
- Developed this system to assist 57 orthopedic surgeons and **resolve decision-making conflicts**.

AI Researcher
NASA (National Aeronautics and Space Administration)

September 2022 - October 2023
District of Columbia, USA (Remote)

- Redesigned the IMPACT team's smoke satellite imagery dataset, which **contained 4 years of top-down footage**; Spearheaded and evaluated residual CNNs to mitigate gradient vanishing problems.
- Mitigated data imbalance of 1:4 in the dataset through **selective augmentation strategies & image feature transformations**.

EDUCATION

B.Tech in Artificial Intelligence, SRM Institute of Science and Technology
CGPA - 8.28/10.00

August 2021 - July 2025

Relevant Coursework: Neural Networks and Machine Learning, Deep Learning Techniques, Design in Artificial Intelligence Products, Inferential Statistics, Advanced Calculus, Image and Video Processing, Reinforcement Learning.

SKILLS

Programming Languages	Python, C, C++, R, Java, TypeScript, JavaScript, CUDA, PostgreSQL, Bash
Frameworks	PyTorch, TensorFlow, Keras, Flask, Next.js, JAX, Hugging Face, LangChain, OpenCV
Miscellaneous	Git, Weights and Biases, Docker, AWS EC2, AWS S3, AWS Lambda, Pinecone

PROJECTS

BourneToKill | RDKit, SciPy, Scikit-Learn, NumPy, Matplotlib | [Project Link](#)

- Engineered an AI-driven quantitative structure-activity relationship (QSAR) algorithm that identified 50+ potential Monoamine Oxidase (MAO) inhibitors, **leveraging 797 PaDEL molecular descriptors** for drug discovery against MAO family proteins.

Deep Divergence Graph Kernel | TensorFlow, NetworkX, NumPy, SciPy | [Project Link](#)

- Refactored a complex implementation** of the Deep Divergence Graph Kernel algorithm by Google Research by leveraging TensorFlow 2.x to enhance framework compatibility and modularity for unsupervised protein graph classification.

PUBLICATIONS

Advith K., Pranav G., Ananth E., Naman N., Deeksha A., Pratham G. "ViDAS: Vision-based Danger Assessment and Scoring," In: *Indian Conference on Computer Vision, Graphics and Image Processing* (**submitted**).

COMMUNITY/LEADERSHIP

Next Tech Lab

- Drove strategic long-term initiatives for SRM's most esteemed and internationally recognized research lab, **honored with the prestigious QS Award for Reimagining Education**.
- Mentored and lectured 30+ members on EEG/MEG source localization, medical image segmentation, large language models, and spiking neural networks.
- Conducted research paper discussions and talks on spiking neural networks, attention mechanisms, and multi-modal systems for lab members.

ACHIEVEMENTS

Convex Zero to One Hackathon | Global Honorable Mention | [Project Demo](#)
OpenHack 2024 by Indian Institute of Science | National Top 50 Teams | [Project Demo](#)

March 2024
February 2024