

# Advith Krishnan



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## EDUCATION

SRM Institute of Science and Technology, Kattankulathur, Tamil Nadu

2021 - 2025 (Expected)

B.Tech in Artificial Intelligence

**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.

## EXPERIENCE

Deep Learning Engineer

January 2024 - Present

MIOT International Hospital

Manapakkam, Tamil Nadu (Remote)

Advisor: Dr. Senthilvelan R

- Implemented a pipeline for shoulder-bone loss estimation & shoulder dislocation type based on shoulder track, **assisting surgical decisions and automating diagnosis**.
- Tracked experiments using Weights and Biases and demonstrated meaningful analytical reports.
- Formulated a few-shot learning methodology** for handling the minimal data availability of around 60 patient scans.

Research Intern

January 2024 - Present

Odyssey Lab

Kattankulathur, Tamil Nadu (Remote)

- Improvise **VQA and temporal action localization methods** for indicating danger in CCTV footage
- Combined XAI methods like guided-GradCAM and Integrated gradients to evaluate architectures.
- Collaborated alongside **10 established researchers and PhD scholars** in vision-language research, making substantial progress with ablation, ideation, and implementation.

Research Intern

September 2022 - October 2023

IMPACT Team @ NASA

Washington, DC (Remote)

Advisor: Dr. Muthukumar R

- Redesigned NASA-IMPACT's anthropogenic smoke emission satellite dataset** for pipeline compatibility.
- Mitigated a segmentation class imbalance of 1:4 in the dataset through **selective augmentation strategies**.
- Eliminated massive image size differences at minimal information loss through **regularization and mosaicking**.
- Engineered residual network architectures to **avoid gradient vanishing** seen in convolutional networks.

## PERSONAL PROJECTS

BourneToKill | RDKit, SciPy, Scikit-Learn, NumPy, Matplotlib

[Project Link](#)

- A bioinformatics project for **discovering inhibitory drugs** against Monoamine Oxidase (MAO) family proteins.
- Analyzed, wrangled and transformed the data queried from the ChemBL database for this project.
- Developed a machine-learning algorithm to identify Monoamine Oxidase inhibitors based on molecular descriptors.

Deep Divergence Graph Kernel | TensorFlow, NetworkX, NumPy, SciPy

[Project Link](#)

- Developed originally by Google Research, this algorithm performs **unsupervised protein graph classification** for identifying mutagenicity in Salmonella typhimurium.
- Refactored most of the old implementation** by leveraging TensorFlow 2.x and removing deprecated code.

## SKILLS

- Programming Languages:** Python, C, C++, R, Bash, TypeScript, CUDA, PostgreSQL, MATLAB
- Frameworks:** PyTorch, TensorFlow, Keras, Brian2, OpenCV, Next.js, JAX, CuPy, Hugging Face, LangChain
- Miscellaneous:** Git, Vercel, Weights and Biases, CMake

## COMMUNITY/LEADERSHIP

Next Tech Lab

Kattankulathur, Tamil Nadu

- Board member** of SRM's most esteemed and internationally recognized research lab, honored with the prestigious QS Award.
- Mentored and lectured 30+ members** on various concepts related to EEG/MEG source localization, medical image segmentation, deep learning, etc.
- Conducted research paper discussions and talks** on spiking neural networks, attention mechanisms, multi-modal systems to lab members