Sathishkumar Thirumalai

LinkedIn | GitHub | Kaggle

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Machine learning researcher

I am a highly skilled engineer and a passionate problem solver with over **10** years of experience. I have designed and developed embedded systems, software systems and machine learning systems for solving problems in various domains such as RFID, Biometrics, and Medical imaging. Currently pursuing research (Ph.D.) on generalization of deep learning.

Technical Skills

Languages	:	python, c, c++, c#
Frameworks	:	pytorch, keras
Libraries	:	pandas, numpy, matplotlib, scikit-learn, opencv
Databases	:	MSSQL, Sqlite
Dev Tools	:	Jupyter, Visual Studio Code, Git, Huggingface, Weights and Biases, Kaggle, Google Colab, Github Codespace, AWS Sagemaker Studiolab, Roboflow, Ultralytics, MLFlow

Experience

Embedded software developer Nov 2012 – Dec 2015
Indira Gandhi Centre for Atomic Research (IGCAR) *Chennai, Tamil Nadu, India*

Python developer Dec 2015 – Dec 2020
Indira Gandhi Centre for Atomic Research (IGCAR) *Chennai, Tamil Nadu, India*

Machine learning Engineer Jan 2021 – Present
Indira Gandhi Centre for Atomic Research (IGCAR) *Chennai, Tamil Nadu, India*

Education

Sri Siva Subramaniya Nadar College of Engineering 2007 – 2011
Bachelor of Engineering in Electronics and Communication *Chennai, Tamil Nadu, India*

Homi Bhabha National Institute (HBNI) 2015 – 2018
Master of Science *Chennai, Tamil Nadu, India*

Projects

Camouflage Object Detection *pytorch, hugging face, weights and biases* Source Code

- Created a dataset and dataloader in pytorch for COD 10K dataset and performed exploratory data analysis using **pytorch and weights and biases**
- Deployed the state of the art model SINET for demonstration using **gradio**

Kaggle Icecube Neutrino direction estimation *pytorch, kaggle, weights and biases* Source Code

- Designed a machine learning model using transformers for performing regression on sequential data
- Submitted the model to the kaggle competition

Kaggle Image Matching Challenge 2023 *pytorch, kaggle, weights and biases* Source Code

- Designed and trained deep learning models for rotation matrix and translation vector estimation.
- Submitted the model to the kaggle competition

Kaggle HubMAP2023 Kidney Segmentation Challenge *pytorch, kaggle, weights and biases* Source Code

- Designed and trained deep learning models such as maskrcnn, fastrcnn, yolov7, yolov8 for kidney image segmentation to detect blood vessels.
- Submitted the model to the kaggle competition(Ranked 400 out of 1000)

Open-source Contributions

Certifications