Sripadam Sujith Sai

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Career Objective

Motivated student with a strong passion for research-driven innovation, specializing in Computer Vision and Deep Learning. Committed to developing innovative solutions that bring about substantial positive change. Possesses expertise in Computer Vision, Human-Robot interaction, and Deep Learning. Seeking a challenging problems to apply my skills and contribute meaningfully.

Education

Indian Institute of Technology (IIT), Hyderabad — *Hyderabad, India*

Bachelor of Technology in Chemical Engineering — *Jul 2024 - Current*

- Exchange student to IIT Hyderabad
- **Courses:** Machine Learning, Cardiovascular Mechanics, Computational Fluid Dynamics, Optimization, Material Science

National Institute of Technology , Rourkela — *Rourkela, India*

Bachelor of Technology in Chemical Engineering — *Dec 2021 - Current*

- Memeber of AIChE (American Institute of Chemical Engineers)
- Working as a Student Mentor
- **Courses:** Fluid dynamics, Thermodynamics, Deep Learning, Statistical Mathematics

Research

Indian Institute of Technology, Hyderabad (IIT H) — *Hyderabad, India*

Optimization of industrial crystallization process using PINNs — *Mar 2025 - Current*

- **Instructor** : Prof. Kishalay Mitra
- Working on an optimization problem to optimize continous crystallizers in industries using Physics Informed Neural Networks (PINNs).

Indian Institute of Technology, Hyderabad (IIT H) — *Hyderabad, India*

Optimization of water networks in Refineries — *Aug 2024 - Current*

- **Instructor** : Prof. Kishalay Mitra
- Working on flow optimization problems to optimize water flow in refineries.

INRIA-Institut national de recherche en sciences et technologies du numérique — *Sophia Antipolis, France*

Predicting Anomalies in Spatio-Temporal Data: Anticipating Future Anomalies in Video Sequences — *Jul 2024 - Sep 2024*

- **Instructor** : Dr. Francois Bremond
- Building model(s) to anticipate anomalies in future in video sequences.

University of Cambridge — *Cambridge, UK*

Multimodal computational modelling for evaluating mental wellbeing from Robot data — *Feb 2024 - Current*

- **Instructor** : Professor Hatice Gunes
- Working on computation of feature graph representations from human behaviour primitives
- Developing multimodal computational modelling for automatically evaluating mental wellbeing.
- **Technical Skills:** Python with PyTorch, Tensorflow, Deep Face, C++.
- **Relevant topics:** Representation Learning, Graph Neural Networks, Computer vision, Deep Learning.

National Institute of Technology Rourkela — *Rourkela, India*

Face Detection For Humanoid Robot — *Aug 2023 - Jan 2023*

- Developed a CNN model that utilised YOLO as a foundation to improve the accuracy of face detection for a Humanoid Robot.
- Trained model on a custom dataset. Optimised the model to detect faces from the side view.
- Significantly boosted the model's accuracy by 40% compared to YOLOV5.
- **Technical Skills:** Python with PyTorch, Tensorflow, NumPy, Matplotlib, Pandas, Scikit-learn, C++.

IIEST Shibpur (Collaboration) — *Rourkela, India*

Emotion Detection and Body language co-relation using ViViT — *Jul 2023 - Jan 2024*

- Developed a model that utilised YOLO as a foundation to improve the accuracy of face detection on Realtime.
- Optimised the model to detect faces from the side view.Augumented and labelled custom dataset and trained the model.
- Implementing Graph Neural Networks & Video Vision Transformers to analyse body language and motion.
- **Technical Skills:** Python with PyTorch, Tensorflow, NumPy, Matplotlib, Pandas, Scikit-learn, C++.

National Institute of Technology Rourkela — *Rourkela, India*

Machine Learning Techniques in CO2 capture and conversion to Cyclic Carbonates — *Aug 2023 - Apr 2024*

- Working on Deep learning techniques in Conversion of CO2 to Cyclic Carbonates.
- Building a model to Simulate and automate the process of CO2 capture , Solvent-Selection and design.
- Model takes the sensory inputs as data and outputs Pyrolysis rate, Mass loss, etc.
- **Technical Skills:** Python with PyTorch, Tensorflow, Chemical Reaction Engineering, NumPy, Matplotlib, Pandas, Scikit-learn, C++.

Publications

IEEE WCCI | 2024 *Accepted*

Conference *July 2024*

- QGAPHEnsemble: Combining Hybrid QLSTM Network Ensemble via Adaptive Weighting for Short Term Weather Forecasting
- Accepted for presentation at the IEEE World Congress on Computational Intelligence (IEEE WCCI 2024) held at Pacifico Yokohama, Yokohama, Japan.

IEEE IJCCI | 2023 *Accepted*

Journal *June 2024*

- A Survey of Hyperparameter Selection Methods for Weather Forecasting using State-of-the-Art Machine Learning Algorithms

IEEE IGARSS | 2024 *Presented the paper*

Conference *June 2024*

- QGAPHNET : Quantum Genetic Algorithm Based Hybrid Qlstm Model for Soil Moisture Estimation
- Presented the paper at International Geoscience and Remote Sensing Symposium - IGARSS 2024 held at Megaron Athens International Conference Center, Athens, Greece.

Membership of Professional Societies

American Institute of Chemical Engineers(AIChE) 2021-present

Skills

Programming Python (Pandas, PyTorch, NumPy, Scikit-learn. etc.), Qiskit, Pennylane, Tensorflow, Keras, C/C++, HTML/CSS, JavaScript, React.
Softwares Autocad, Aspen
Miscellaneous LaTeX(Overleaf/R Markdown), Microsoft Office, Git.
Soft Skills Time Management, Teamwork, Problem-solving, Documentation, Engaging Presentation.

Achievements

2024 **Winner,** Smart India Hackathon *India*
2023 **Top 300/32000+,** Amazon ML Summer School *India*
2022 **Winner,** Codes de Caza *India*
2022 **Rank 3,** Chem-E-Jeopardy *India*
2019 **Finalist,** Inspire - National Science Challenge *India*
2021 **Top 2%,** JEE Mains *India*

Courses and Specializations

SUPERVISED MACHINE LEARNING *Jun 2023*

Stanford University | Coursera

DEEP LEARNING *Jul 2023*

IBM | Coursera

NEURAL NETWORKS & DEEP LEARNING *Jul 2023*

DeepLearning.ai | Coursera

Links

LinkedIn: **sripadam-sujith-sai**
Github: **SujithSaiSripadam**
CodeChef: **Sujith**
Kaggle: **Sujith04**
Portfolio: **Sujith**