Sai Karthik Nallamothu

+91 8688077692 | sai14karthik@gmail.com | Website | LinkedIn | GitHub | Google Scholar

Skills

- **Programming Languages:** Python, C++, Java, JavaScript, SQL
- **Web Technologies:** HTML5, CSS3, React, Node.js, Express.js
- **Database Systems:** MySQL, MongoDB, SQLite
- **Data Science & Machine Learning:** scikit-learn, TensorFlow, Keras, PyTorch, Pandas, NumPy
- **Cloud Technologies:** AWS (S3, EC2), Google Cloud Platform, Microsoft Azure
- **DevOps & Version Control:** Git, GitHub, Docker, Jenkins, CI/CD basics
- **Specialized Area:** Machine Learning, Deep Learning, Explainable AI, Time Series Analysis
- **Mathematical & Statistical Tools:** MATLAB, R, MATLAB, Excel, Statistical Analysis, Probability
- **Other Tools & Technologies:** Jupyter Notebook, VS Code, Postman, Tableau, Power BI
- **Research Skills:** Literature Review, Data Analysis, Experiment Design, Report Writing, Academic Publishing, Presentation Skills

Experience

- **SRM University-AP [🌐]** *Aug 2023 – Present*
  Research Assistant On Campus
  - Developed a real-time intrusion detection model using Genetic Algorithm for feature selection in cybersecurity.
  - Designed an early autism screening model and a saffron adulteration detection prototype using federated learning.

- **TULIP Lab[🌐]** *Jun 2024 – Sept 2024*
  Research Intern Virtual
  - Conducted time series anomaly detection using PyOD, DeepANT, STUMPY, and scikit-learn under the guidance of Prof. Gang Li at TULIP Lab, Deakin University.
  - Implemented Isolation Forest, Gaussian Mixture Model, and AutoEncoder with comparative evaluation of their performance.

Education

- **SRM University-AP** *Aug 2021 – Present*
  B.Tech in Computer Science and Engineering Andhra Pradesh, India
  - Project: Permutation Effects in Multilingual Summarization using Transformers via Ordered Evaluation
  - GPA: 8.82/10
  - Relevant coursework: Machine Learning, Data Structures and Algorithms, Operating Systems, Computer Organization and Architecture , Artificial Intelligence.

Projects

- **Multi-Model Disease Classification and Prediction** *2024*
  Tools: Python, sklearn, seaborn, matplotlib, Jupyter Notebook [GitHub]
  - Developed ML models to classify Breast Cancer, Diabetes, Heart Disease, Lung Cancer, and Parkinson's Disease.
  - Achieved 96% accuracy through efficient preprocessing and model tuning techniques.

- **ANN Optimization using Genetic Algorithm and Fuzzy Logic** *2024*
  Tools: Python, sklearn, matplotlib, tensorflow, seaborn, skfuzzy, deap, Jupyter Notebook [GitHub]
  - Designed ANN system with Genetic Algorithm for hyperparameter tuning on MRI-based dementia dataset.
  - Utilized VGG16/VGG19 for feature extraction and applied fuzzy logic for robust classification.

- **Intrusion Detection using Machine Learning and Deep Learning** *2024*
  Tools: Python, sklearn, seaborn, matplotlib, Jupyter Notebook [GitHub]
  - Analyzed KDD'19 dataset using classifiers like Naive Bayes, Random Forest, and MLP.
  - Improved accuracy by implementing feature selection and preprocessing pipelines.

Patents and Publications

C=Conference, J=Journal, P=Patent, S=In Submission, T=Thesis

[C.1] **Application of Machine Learning Algorithms and Feature Selection using Genetic Algorithm: A Case Study on Cyber Attack Detection**. In *Proceedings of the 9th International Conference on Innovations in Information and Communication Technology (I2CT)*, 2024.

[C.2] **Comparative Analysis of Feature Representations for Topic Modeling with Latent Dirichlet Allocation**. In *Proceedings of the 15th International Conference on Computing, Communication and Networking Technologies (ICCCNT)*, IIT Mandi, 2024.

[C.3] **Early Childhood Autism Screening Through Facial Feature Extraction**. In *Proceedings of the 8th International Conference on Parallel, Distributed and Grid Computing (PDGC)*, 2024.

[C.4] **Assessment of Data Augmentation Paradigms in Pathology Identification**. In*Proceedings of the 22nd International Conference on Information Technology (OCIT)* 2024.

[P.1] **A System for Autism Spectrum Disorder Detection**. Patent Office of India, Patent ID: 20244105350. Publication Date: 2024.

[P.2] **A System and Method for Detecting Adulteration in Saffron using Federated Learning**. Patent Office of India, Patent ID: 202441074334. Publication Date: 2024.

Certifications

- **Database Management System – IIT Kharagpur (NPTEL)** *Sep 2023*
- **Data Analytics Essentials – Cisco Networking Academy** *Jul 2023*

Leadership and Achievements

- **Gold Medal – 9th Research Day** *March 2024*
  SRM University – AP
  - Awarded for outstanding undergraduate research in Multilingual based Hybrid summarization.
  - Recognized for technical innovation and practical impact in academic research.
- **Travel Grant & Patent Grant Recipient** *May 2024*
  SRM University – AP
  - Secured institutional funding to present research at a national conference and file a patent.
  - Encouraged for academic excellence, innovation, and research dissemination.

Coding Platforms

- **CodeChef:** sai14karthik
- **LeetCode:** sai14karthik
- **GeeksforGeeks:** sai14karthik

References

1. **Dr. Tapas Kumar Mishra**
   Assistant Professor, Department of Computer Science and Engineering
   SRM University – AP
   Email: tapas.mishra@srmap.edu.in
   Relationship: Thesis Advisor and Research Guide
2. **Prof. Nitul Dutta**
   Professor, Department of Computer Science and Engineering
   SRM University – AP
   Email: nitul.dutta@srmap.edu.in
   Relationship: Project Supervisor and Academic Mentor
3. **Prof. George Ghinea**
   Professor, Department of Computer Science
   Brunel University London
   Email: george.ghinea@brunel.ac.uk
   Relationship: Research Collaborator and Mentor
4. **Dr. Satish Anamalamudi**
   Associate Professor, Department of Computer Science and Engineering
   SRM University – AP
   Email: sathish.a@srmap.edu.in
   Relationship: Research Collaborator and Guide