

Siddharth Selvakumar

B.Tech Computer Science and Engineering (2023–2027)
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Education

SRM Institute of Science and Technology, Tiruchirappalli 2023–2027
B.Tech in Computer Science and Engineering
CGPA: 8.85/10
Relevant Coursework: Machine Learning, Deep Learning, Computer Vision, NLP, IoT Systems, Data Structures

Publications

- **Book Chapter (Published):** *Health Tech: Enhancing Wellness and Empowering Individuals through Technology.*
 - **Under Review:** *Federated Learning and Explainable AI for Privacy-Preserving Healthcare Systems.*
 - **Under Review:** *Q-Learning-Based Sleep Scheduling for IoT Devices with Privacy and Edge Compatibility.*
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Research Experience

- **Research Intern, NIT Tiruchirappalli** (2024) under Dr. M. Sridevi — Developed OCR preprocessing pipelines using Python, OpenCV, and Tesseract, achieving **90%+ recognition accuracy**.
 - Conducted interdisciplinary research on **gas sensing sensors** using MATLAB and LabVIEW, improving detection sensitivity by **12%** for environmental monitoring.
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Key Projects

- **GaiaEye – Multimodal AI System** — Built a multimodal deep learning architecture combining CNN-based vision encoders and transformer-based text models, achieving **92%** accuracy on a dataset of 5,000+ multimodal samples and reducing inference time by **18%** through model optimization.

- **ResQ – Smart Accident Data Recorder (Patent Filed)** — Developed an IoT-based accident detection and SOS alert system using ESP32 and OpenCV; led to an **Indian patent filing**.
- **AI Mental Health Chatbot** — Created an NLP-based chatbot using HuggingFace Transformers and NLTK; achieved **82% sentiment accuracy** across user trials.
- **Farm Connect** — Designed a mobile app with **AI-driven crop recommendations, weather insights, and direct sales platform**, empowering **100+ farmers**.
- **SLAM Rover Fleet Management** — Led a 3-member team at SYNTHETIX 3.0 Hackathon; implemented ROS-based SLAM that reduced localization error by **15%**.

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Internships & Training

- **EduxLabs (IIT Madras Collaboration)** — Applied ML algorithms in business intelligence; built predictive dashboards improving analysis efficiency.
- **CodeGalatta** — Developed **3 full-stack web apps** (React, Node.js, Flask) with integrated ML modules; optimized runtime by **20%**.
- **Forage Virtual Internships** — Completed **3 industry simulations**: Data Visualization (Tata), Software Engineering (JPMC), and Software Engineering (Electronic Arts).

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Honors & Leadership

- **Technical Head – Neuro Tech Titans** — Conducted **5+ AI/ML workshops** and mentored peers on applied research projects.
- **Winner – BOTIFY Chatbot Competition** (SRM Tech Fest) — Achieved 1st place among **15+ teams** for NLP-based chatbot design.
- **Top Team – SRM Innovate 2K25 Ideathon & Hackovation 2.0 (VIT Vellore)** — Ranked among **top 50+ teams** for interdisciplinary innovation.
- Hackathon participant at **SYNTHETIX 3.0 (VIT Chennai)** and multiple national-level competitions.

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Technical Skills

Languages: Python, Java, SQL

Frameworks/Tools: TensorFlow, PyTorch, OpenCV, Flask, React, Git, ROS

Domains: Machine Learning, Deep Learning, Computer Vision, NLP, Federated Learning, Multimodal AI, Full-Stack Development