Sai Ganesh CS

Chief Executive Officer, Genik Technologies Pvt. Ltd.
Software Proprietor, NeuLab & Rearticle
Academic Consultant and Corporate Trainer
Technologist in AI & Engineering Simulations

Contact Details:
Website: www.saiganeshcs.com
Email: bridgesaiganesh@gmail.com
Phone: +91 8754444820
Linkedin: Sai Ganesh CS | *Link*
Google Scholar: Sai Ganesh CS | *Link*

Education

1. **Bachelor of Engineering** (2019-23)
    - Electrical and Electronics Engineering, Sri Sai Ram Engineering College, Anna University, 8.93 GPA | Link
2. **Diploma** (2018-2019)
    - C++ & SQL, CSC Computer Education Pvt Ltd, A+ | Link
3. **IBM Qiskit Global Summer School** (2021)
    - Quantum Machine Learning | Link

Work Experience

1. **Chief Executive Officer – Genik Technologies Pvt. Ltd** *(04/2021-Present, Chennai, IN | **Credential**)*
    Products: NeuLab – Simulator & Compiler, Rearticle – LaTeX Manuscript Editor
    Role: Developing algorithms, decisive models, cloud solutions, and docker images
    Research: Machine Learning, Power Engineering, Communication Systems, DevSecOps and Customer Experience.
    Advisors: Muthuvel A, Azhagumurugan R, Nayanatara C, and Porselvi T

2. **Visiting Researcher (Mitacs GRI) – University of Manitoba** *(05/2022-08/2022, Winnipeg, CA | **Credential**)*
    Project: Generative Deep Learning for Electromagnetic Imaging.
    Role: Developing optimization algorithms, generative models, and integrating modules.
    Research: Image Reconstruction, Inverse Problems, Forward Solvers, Optimization Algorithms, SDM, and Microwave Imaging.
    Supervisor: Prof. Ian Jeffrey.

2. **Project Trainee (AUV) – National Institute of Ocean Technology** *(01/2022-05/2022, Chennai, IN | **Credential**)*
    Project: ML Based Localization and Guidance System for AUVs.
    Role: Developing CV algorithm for near-field guidance, EM Wave Based ML algorithm for far-field guidance.
    Research: Object Tracking & Detection, AUV Homing Guidance, Edge Computing and Embedded Systems.
    Supervisor: Vedachalam N (Sr. Scientist, NIOT).

3. **R&D Intern – Vecmocon Technologies Pvt. Ltd.** *(05/2021-12/2021, Chennai, IN (Partial Remote) | **Credential**)*
    Project: Intelligent Battery Management System with Edge Computing for Electric Vehicles.
    Role: Developing Predictive Models for BMS, Vehicle Dashboard & Internet of Things Platform.
    Research: Machine Learning, Ensemble Techniques, and Internet of Things
    Supervisor: Adarsh Kumar (COO, Vecmocon Technologies)

4. **Project Trainee (SDE) – National Institute of Ocean Technology** *(12/2020-06/2021, Chennai, IN (Partial Remote) | **Credential**)*
    Project: Underwater Acoustic Propagation Modelling.
    Role: Developing Propagation Models, Machine Learning algorithms for Improvising Model Selections.
    Research: Underwater Acoustics, Propagation Modelling, Machine Learning Algorithms.
    Supervisor: Bala Naga Jyothi (Scientist, NIOT)

5. **Machine Learning Internship – IETE** *(09/2020, Remote | **Credential**)*
    Projects: Supervised ML & Computer Vision Based Web Applications.
    Role: Developing ML & CV models, Webpages, and Databases.
    Tools: TensorFlow, Scikit Learn, HTML, CSS, JavaScript, Flask, and Django.

6. **Engineering Assistant (AI) – ZRAE Global** *(01/2020-07/2020, Chennai, IN | **Credential**)*
    Projects: ML Based Resources Planner for Solar and Thermal Plants.
    Role: Research in plant data, choosing optimal algorithms, Developing ML models and web apps.
    Tools: TensorFlow, Scikit Learn, HTML, CSS, JavaScript, Flask, and Django.
    Supervisor: Kishore Abishek M (Director, ZRAE Global)

7. **R&D Intern – Siechem Technologies Pvt. Ltd.** *(04/2019-07/2019, Chennai, IN)*
    Projects: Software for Electrical/Aerospace Cable Modelling & Long-Range RFID Recognition System for Industry.
    Role: Software Development, Hardware Setup, and testing.
    Tools: MATLAB, Java, and SQL.
    Supervisor: Rengaraj Ramasubbu (Professor, SSN College of Engineering), Dhivakar V (R&D Manager, Siechem Technologies)

Publications

1. **Machine Learning Based Classification and Modelling of Underwater Acoustic Communication** *(OCEANS 2022 | __DOI Link__)*
   Authors: Sai Ganesh CS, Bala Naga Jyothi V, Aouthithiye Barathwaj SR Y, Azhagumurugan R
   Keywords: Underwater Acoustics, Bellhop, Kraken, Scooter, Ramgeo Models, Machine Learning.

2. **IoT Based Coal Mine Safety and Health Monitoring System using LoRaWAN** *(IEEE ICSPC 2021 | __DOI Link__)*
   Authors: Porselvi T, Sai Ganesh CS, Janaki B, Priyadarshini K, S Begam.
   Keywords: Safety Engineering, Internet of Things, LoRaWAN.

3. **Field Oriented Control and Speed Estimation of PMSM using Reinforcement Learning and NN.** *(IEEE ICPECTS 2022 | __DOI Link__)*
   Authors: Ragavendran R, Bhavan C, Sai Ganesh CS, Manoj Kumar, Solana Appalo A M.
   Keywords: Battery Management System, PMSM Motors, BLDC Motors, Machine Learning.

4. **A Systematic Review of Quantum Computing Methodologies and their Advancements** *(Submitted to Physics Letters A | __Abstract__)*
   Authors: Sai Ganesh CS, Aouthithiye Barathwaj, Swethaa S, Pavithiran G, Azhagumurugan R.
   Keywords: Quantum Entanglement, Quantum Communication, NMR, SPDC.

5. **Machine Learning Based HSV Space for YOLOv4 in Underwater Imaging** *(Revision Submitted to ESWA | __Abstract__)*
   Authors: Sai Ganesh CS, Aouthithiye Barathwaj SR Y, Azhagumurugan R, Swethaa S.
   Keywords: Underwater Color Spectrum, Computer Vision, Machine Learning, YOLOv4

6. **Improvised Aerial Object Detection Algorithm Based on Weighted Luminance** *(ArXiv - Cornell University Preprint | __DOI Link__)*
   Authors: Sai Ganesh CS, Aouthithiye Barathwaj SR Y, Swethaa S, Azhagumurugan R.
   Keywords: Deep Learning, Computer Vision, Rayleigh and Mie Scattering, YOLOv4.

7. **Deep Learning Based Predictive Analysis of BLDC Motor Control** *(IEEE GCAT 2022 | __DOI Link__)*
   Authors: Porselvi T, Aouthithiye Barathwaj SR Y, Sai Ganesh CS, Tresa Sangeetha.
   Keywords: Machine Learning, ANN, BLDC Motors, Motor Controllers.

8. **PV System Based Induction Motor with Landsman Converter Using IFOC Controller** *(IEEE GCAT 2021 | __DOI Link__)*
   Authors: Porselvi T, Krithika K, Sai Ganesh CS.
   Keywords: Power Electronics, Motor Controllers, PV Systems.

9. **Predictive Modelling for Healthy Marine Life and Ecosystem using Ensemble Techniques** *(OCEANS 2022 | __DOI Link__)*
   Authors: Aouthithiye Barathwaj SR Y, Azhagumurugan R, Swethaa S, Haariharan N C, Sai Ganesh CS, Mahesh J.
   Keywords: Machine Learning, Marine-life ecosystem, Ocean Acidification, Climate Change.

10. **Hybrid Boost Converter for AC and DC Loads Using PV System Controller** *(Springer: RAET | __DOI Link__)*
    Authors: Porselvi T, Preethi K, Aouthithiye Barathwaj SR Y, Sai Ganesh CS, Kothai R.
    Keywords: Fuzzy Control, PID Controller, PV Systems.

11. **Low Frequency Underwater Acoustic Modelling Based on Deep Learning** *(IEEE ESTCON 2022 – Malaysia |__DOI Link__)*
    Authors: Azhagumurugan R, Sai Ganesh CS, Porkumaran K, Aouthithiye Barathwaj SR Y, Nayanatara C.
    Keywords: Underwater acoustics, Supervised Machine Learning, Predictive Modelling.

12. **Smart Earthquake Detector and Rescuing System for Differently Abled Person** *(IEEE ICPECTS 2022 | __DOI Link__)*
    Authors: Jeeva C, Porkumaran K, C S Boopathi, Sai Ganesh CS, Krithika B.
    Role: GDTAB Waves, GSM, EEG.

13. **Congestion Management in Deregulated Power Systems using Genetic Algorithm** *(IEEE ICPECTS 2020 | __DOI Link__)*
    Authors: Sharmila P, Baskaran J, Nayanatara C, Sai Ganesh CS, Haariharan N C.
    Keywords: Genetic Algorithm, FACTS, Power System Optimization.

14. **Scheming Electrical Wheel Chair Controlled by Brain GDTAB Waves** *(IEEE ICPECTS 2020 | __DOI Link__)*
    Authors: Suresh Kumar, Shanmugapriya P, Naveen Kumar, Aouthithiye Barathwaj SR Y, Sai Ganesh CS.
    Role: GDTAB Waves, ZigBee, EEG.

15. **Optimization of Renewable Energy Parameters for Maximizing Power Output** *(IEEE ICPECTS 2020 | __DOI Link__)*
    Authors: Nayanatara C, Sharmila P, Shanmugapriya P, Janani T, Sai Ganesh CS.
    Keywords: Power System Optimization, IEEE Standards, Renewable Energy.

Citations: 116 | h-index: 7 | __ResearchGate Link__ | __Google Scholar Link__

Specializations & Skills

1. **Machine Learning** *(TensorFlow, Keras, Sci-kit Learn, Pytorch, Numpy, Pandas & Essential Plotting tools.)*
2. **Quantum Computing** *(Qiskit, Cirq, Rigetti & TensorFlow Quantum)*
3. **Engineering Simulation** *(Simulink, Keysight ADS, Ansys HFSS & Ansys Maxwell)*
4. **Programming** *(Python, Java, Javascript, C/C++, HTML, CSS, SQL, MATLAB & LaTeX)*
6. **Embedded Systems** *(Raspberry Pi, Jetson Nano, NodeMCU & TI-MSP, 8051 & 8081)*
7. **IoT, Cloud & Edge Computing** *(MATLAB-ThingSpeak, Adafruit, Firebase, Heroku, LoRaWAN, XBEE & ZigBee)*
8. **System Administration** *(Linux Administration, Git, Bash, csh, Office Tools & Workspace Management)*

Certifications

1. **QTM3x: Architecture, Algorithms, and Protocols of a Quantum Computer** *(Delft University-edX | [Credential](#))*
2. **Diploma: Quantum Computing & Programming** *(QWorld | [Credential](#))*
3. **Professional TensorFlow Developer** *(deeplearning.ai | 4 Courses | [Credential](#))*
4. **Deep Learning Specialization** *(deeplearning.ai | 5 Courses | [Credential](#))*
5. **TensorFlow: Data & Deployment** *(deeplearning.ai | 4 Courses | [Credential](#))*
6. **AI in Medicine** *(deeplearning.ai | 3 Courses | [Credential](#))*
7. **Quantum Mechanics** *(Coursera-University of Colorado Boulder | [Credential](#))*

Patents

1. **RFID Based Multi-purpose Grid and Tracking System for Agricultural Field Robots**
   (Final Revision Submitted |202141016513 |Inventors: Sai Ganesh CS, Aouthithiye Barathwaj, Azhagumurugan)
2. **Processed Bamboo Based Irrigation System with Surveillance Platform for Field Robots**
   (Published | 202141012727 | Inventors: Azhagumurugan, Sai Ganesh CS, Aouthithiye Barathwaj)
3. **Intelligent waste classifying for Eco-friendly Bio Composting**
   (Published | 202141030061 | Inventors: Aouthithiye Barathwaj, S Bahera, Vasundhara L, Saisudha G, Sai Ganesh CS)
4. **IoT Based Fishing and Security System for Watercraft Vessels.**
   (Published | 202241018251 | Inventors: Haariharan N C, Aouthithiye Barathwaj SR Y, Azhagumurugan R, Swethaa S, Sai Ganesh CS)

Honors & Awards

1. **Mitacs GRI Award** *(Issued by Mitacs, Research Manitoba & UManitoba | [Credential](#))*
2. **Innovation Voucher Grant** *(Issued by Govt. of Tamil Nadu| [Credential](#))*
3. **Leo Muthu Scholarship** *(Issued by Sairam Institutions | [Credential](#))*
4. **Winner, OCEANS International Hackathon 2022** *(Issued by IEEE OES, Marine Technology Society | [Credential](#))*
5. **Winner, Agri-Food Hackathon 2021** *(Issued by IIT Kharagpur, ABIF | [Credential](#))*
6. **IEI Best Student Award** *(Issued by Institute of Engineers (IEI), India | [Credential](#))*
7. **NASSCOM AI Scholarship** *(Issued by NASSCOM | [Credential](#))*
8. **TNSI 2020 Finalist** *(Issued by Govt. of Tamil Nadu | [Credential](#))*
9. **Technical Chair** *(IEEE ICPECTS 2022 | [Credential](#))*
10. **Student Chair** *(IEEE ICPECTS 2020 | [Credential](#))*

Invited Talks

1. **Workshop on 'Deep Learning & Optimization Techniques'** *(Dept. of CSA, SRM University, City Campus | [Credential](#))*
2. **Workshop on 'AI & ML for Automobile Engineering'** *(Dept. of AE, Madras Institute of Technology | [Credential](#))*
3. **Seminar on 'Role of Power Electronics in Day-to-Day Life'** *(Dept. of EE, Sri Sai Ram Engineering College | [Credential](#))*
4. **Talk on 'Machine Learning in Web 3.0 & Industry 5.0'** *(Dept. of AIML, Sri Sai Ram Engineering College | [Credential](#))*

Declaration:

I hereby declare that the above particulars of facts and information stated are correct to the best of my belief and knowledge.

Place: Chennai

Date: 01.03.2023   Sai Ganesh CS