SAILESHKUMAR SELVAKUMAR

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OBJECTIVE

Recent B.Tech graduate in Information Technology from PSG College of Technology with a strong academic foundation and hands-on project experience in Machine Learning, Data Mining, Deep Learning, and Full Stack Web Development. Passionate about building intelligent, data-driven systems and scalable web applications. Eager to apply my skills in a dynamic software development or AI-focused role that fosters continuous learning and innovation.

EDUCATION

B.Tech in Information Technology, PSG College of Technology   2021 – 2025
CGPA: 8.33
Relevant Coursework: Machine Learning, Data Mining, Deep Learning, Web Development

Grade XII, Yuva Bharathi Public School   2021
Percentage: 96.2%   Stream: Information Practices

Grade X, Yuva Bharathi Public School   2019
Percentage: 96.6%

SKILLS

Programming Languages	C, C++, Python, Java, Basic JavaScript, SQL (Oracle SQL)
Web Technologies	Basic React, HTML, CSS, JavaScript
AI / ML	TensorFlow, Keras, Scikit-learn, Pandas, NumPy, OpenCV
Tools	GitHub, Git, VS Code, Android Studio, IntelliJ
Soft Skills	Leadership, Team Collaboration, Communication, Time Management

EXPERIENCE

Full Stack Development Intern (MERN Stack)   Dec 2023 – May 2024
Ezio Solution Private Limited   *Coimbatore, India*

- Undertook a 6-month industry internship as part of the academic curriculum during Semester VI.
- Spearheaded the development of a full-stack web application leveraging the MERN stack: React.js, Node.js, Express.js, and MongoDB.
- Engineered secure user authentication systems and developed scalable RESTful APIs to support core functionality.
- Designed responsive frontend components aligned with user expectations, improving overall UI/UX.
- Collaborated using Agile methodologies and Git-based version control, ensuring smooth coordination and iterative delivery.

PROJECTS

Brain Tumor Detection using Multimodal Image Fusion

- Designed a medical imaging tool by fusing CT and MRI scans to improve tumor visualization and diagnostic accuracy.
- Conducted feature extraction and selection from the fused images for binary classification of tumor presence.
- Employed optimization techniques such as Particle Swarm Optimization (PSO), Dragonfly Search Optimization (DSO), and Genetic Algorithm (GA) to enhance model performance.
- Built a GUI using Tkinter to facilitate easy image upload and display of prediction results.

Target Tracking in Wireless Sensor Networks (WSN)

- Implemented a real-time target tracking system in wireless sensor networks using the Extended Kalman Filter algorithm.

- Focused on improving the accuracy and robustness of tracking dynamic targets under noisy environmental conditions.

- Applied advanced filtering techniques to estimate target position and movement reliably across sensor nodes.

PUBLICATIONS

Deep Learning-Based Brain Tumor Detection Using Multimodal Fusion of CT and MRI Images
JRANNS, 2024
Link: [Link]

- Published a comprehensive review on the application of deep learning techniques in multimodal medical image fusion (MMIF) for brain tumor diagnosis.

- Highlighted the benefits of combining CT and MRI modalities to enhance both spatial detail and soft-tissue contrast in tumor detection.

- Analyzed cutting-edge deep learning models including CNNs, GANs, autoencoders, and transformers used for image fusion and classification.

- Explored advanced techniques such as attention mechanisms, hybrid models, and multi-scale fusion to improve spatial and semantic consistency.

- Emphasized the role of Explainable AI (XAI) to build model interpretability and clinical trust.

- Addressed challenges like data sparsity, generalization issues, and high computational requirements, and proposed solutions such as few-shot learning, federated learning, and real-time inference.