SWAMINATHAN P L

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Summary

Final-year B.Tech ECE student seeking software development roles, with strong skills in backend development, data structures, and scalable real-time systems, and proven experience in competitive programming.

Education

Indian Institute of Information Technology Kottayam   **Nov 2022 − Present**
*B.Tech in Electronics and Communication Engineering (**CGPA: 9.26** Upto Semester 7)*   *Kottayam, Kerala*

Velammal Bodhi Campus   **Jun 2021 − Aug 2022**
Class 12 - CBSE   *Chennai, Tamil Nadu*
*Scored **93.5%** in CBSE Board Examination, Secured **94.98** percentile in JEE Mains.*

Experience

Positive Integers Pvt Ltd   **Dec 2024**
Data Science Intern - Machine Learning   *Chennai, Tamil Nadu*
− Built **scalable data pipelines** for real-time supply chain analytics using **Python**, improving ML model accuracy. Automated validation and transformation of **high-volume datasets** (over 1000 data points) using **asynchronous workflows** for efficient data processing. Created and documented **machine learning models** to streamline data flow.

NIT Tiruchirappalli   **Jun 2024 − Jul 2024**
Research Intern - Networking   *Tiruchirappalli, Tamil Nadu*
− Worked under **Dr. B. Nithya**, Assistant Professor on advanced wireless networking research. Simulated **Flying Ad Hoc Networks (FANETs)** in **NS-3 (C++)** to optimize TCP performance, diagnosed issues in **multi-tier architectures**, performed low-level **debugging** in **Linux**, and authored a comprehensive **research paper** detailing the methodology and results.

Projects

LiveSync - Smart Mesh Meet | *Node.js, Express.js, MongoDB, Socket.IO, PeerJS* ⚙ ⬈   **Jun 2025 − Aug 2025**
− Built a scalable real-time video conferencing platform using **WebRTC (PeerJS)** with a **Node.js**–**Express** backend, **MongoDB**, and **JWT**-based authentication. Enabled multi-user mesh calls with **audio/video controls, screen sharing, live chat (Socket.IO)**, and reliable connectivity via a **STUN/TURN servers**, deployed on **Render**.

ShopSphere - Fashion and Lifestyle Online Store | *Node.js, Express.js, MongoDB, JS* ⚙ ⬈   **May 2025 - Sep 2025**
− Developed a **full-stack responsive e-commerce web application** with a polished UI, dynamic product catalog, and persistent **shopping cart** using **MongoDB**. Implemented secure **user authentication**, **RESTful APIs** with **Node.js** and **Express.js**, and integrated **Stripe payments** with coupon support in a modular, scalable architecture.

Achievements

- Solved **1300+ DSA problems** across **LeetCode**, **CodeChef**, and **Codeforces**, demonstrating expertise in algorithms, data structures, and problem-solving.
- LeetCode max rating: **1810** and rated top **7%** among all LeetCode users, with a **500+ day** daily streak.
- CodeChef max rating: **1623 (3 Star)**, Global Rank **80** in STARTERS 185 (Div 3).

Technical Skills

Languages: C/C++, Python, JavaScript, SQL, HTML/CSS
Frameworks & Libraries: Node.js, Express.js, PeerJS, Socket.IO, Scikit-learn, TensorFlow, Keras, Pandas, NumPy.
Databases: MySQL, MongoDB
Tools: Git, Jupyter, Kaggle, MATLAB, VS Code, Postman
Concepts: Backend Development, REST APIs, API Integration, Data Structures and Algorithms, Security (JWT), Regression, Classification, Neural Networks.
Competitive Programming: CodeChef, Codeforces, LeetCode

Certification and Courses

- Operating System Course: Learn Fundamentals of Operating System by Srikanth Varma on Scaler **(in progress)**.
- DBMS Course: Master the Fundamentals and Advanced Concepts by Srikanth Varma on Scaler **(in progress)**.
- Machine Learning (Regression & Classification) course by Andrew NG on Coursera.