

# Saravanan P

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## EXPERIENCE

08/2024 - 04/2025 **SRUSHTY GLOBAL SOLUTIONS.**  
*Junior Software Developer*

Chennai, IN

- Orchestrated the development of high-performance image processing pipelines, slashing computational latency by 30% through parallel processing and optimized memory management. Diagnosed and resolved 95% of critical system crashes by implementing robust error handling, logging frameworks, and automated recovery protocols. Partnered with cross-functional teams to integrate machine learning-based enhancements, improving feature detection accuracy.
- Conceptualized and deployed a full-stack streaming platform, amplifying UI interactivity through React's Virtual DOM and optimizing global state management with Redux Toolkit. Engineered scalable RESTful APIs and real-time communication via WebSockets in Node.js & Express, cutting API response times by 40%. Leveraged MongoDB indexing strategies to refine database query performance, achieving a 50% boost in data retrieval speeds. Strengthened authentication mechanisms with JWT, OAuth2.0, and role-based access control (RBAC) to fortify system security.
- Developed and streamlined high-throughput API endpoints in Python (FastAPI & Flask), accelerating data retrieval by 45%. Implemented Redis-based caching strategies, curtailing redundant API calls by 60%. Spearheaded asynchronous task execution using Celery and RabbitMQ, enhancing system responsiveness. Enforced rigorous unit testing with PyTest, bolstering code quality and slashing bug resolution time by 35%.
- Spearheaded the full-stack architecture of a dynamic web platform. Augmented server-side efficiency by 50% through Nginx reverse proxy optimizations and asynchronous event-driven programming. Implemented real-time data synchronization via WebSockets, refining user experience with seamless interactions. Revamped backend logic with optimized algorithmic structures, reducing execution latency by 40% while ensuring system robustness and maintainability.

10/2023 - 01/2024 **EAGLE TECH IT SOLUTIONS.**  
*Junior Software Trainee*

Chennai, IN

- Constructed and deployed dynamic websites for a computer center and bookstore, leveraging Java, MySQL, HTML, and CSS to modernize business operations and improve user engagement by 30%. Integrated responsive UI components, ensuring seamless cross-device compatibility and intuitive navigation.
- Formulated an optimized backend structure utilizing Java Servlets and JDBC, enhancing data retrieval speeds and cutting query execution time by 40%. Implemented database indexing and normalization strategies, achieving a 50% improvement in processing efficiency.
- Automated transactional workflows to streamline customer interactions, reinforcing data integrity and security. Orchestrated authentication protocols and efficient data-handling mechanisms, delivering a frictionless and secure user experience.

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## PROJECTS

### FUNCTIONAL VERIFICATION OF A 16-BIT RISC-V ALU, DEBUGGING THE SILICON BRAIN:

- Deconstructed and analyzed the ALU of a 16-bit RISC-V processor, ensuring adherence to RISC-V ISA and validating computational integrity.
- Built a rigorous testbench (TB) in SystemVerilog, embedding custom assertions, intelligent checkers, and structured debug logs to track anomalies and enforce correctness.
- Operated within a 4-member verification squad, stress-testing ALU operations, diagnosing logic inefficiencies, and optimizing verification workflows to push coverage towards 100%.

### TASKSYNC A COLLABORATIVE TASK MANAGEMENT SYSTEM:

- Engineered a task management web app using React, Node.js, Express, and MySQL, enabling users to create, assign, and track tasks with real-time status updates and deadline notifications.
- Developed a secure backend API for task handling and user authentication, optimizing database queries for efficient task retrieval and ensuring seamless collaboration for small teams.

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## EDUCATION

2019 - 2023 **PERUNTHALAIVAR KAMARAJAR INSTITUTE OF ENGINEERING AND TECHNOLOGY**  
*Bachelor of Technology in Electronics and Communication Engineering*

Chennai, IN

- Developed expertise in circuit design, signal processing, and embedded systems, with hands-on experience in microcontrollers, VLSI, and wireless communication.

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## SKILL

- Languages: Java, Python
- Technologies: React, HTML, CSS
- Databases: MySQL, MongoDB