

# PRANAV RAJ SOWRIRAJAN BALAJI

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[www.linkedin.com/in/pranavraj-sb](https://www.linkedin.com/in/pranavraj-sb) ◊ [github.com/Pranav2501](https://github.com/Pranav2501) ◊ [pranavraj-portfolio.onrender.com](https://pranavraj-portfolio.onrender.com)

**Objective:** A software engineer driven to build scalable full-stack systems and AI-powered applications. Seeking roles in backend development, mobile application development and cloud infrastructure to create high-performance, impactful solutions.

## EDUCATION

<b>Northeastern University, Oakland, CA</b> <b>Master of Science in Computer Science</b> <b>Coursework:</b> <i>Object Oriented Programming, Algorithms, Data Visualization, Computer Vision</i> Mobile Application Development(iOS), Database Management Systems, Web Development, Computer Networks	Sep 2023 - Present Expected graduation: April 2025 <b>GPA: 4.0/4.0</b>
<b>Sri Sivasubramaniya Nadar College of Engineering, Chennai, India</b> <b>Bachelor of Engineering in Computer Science &amp; Engineering</b>	Aug 2019 - May 2023 <b>GPA: 8.578/10.0</b>

## TECHNICAL SKILLS

<b>Programming Languages</b>	Python, Java, C, C++, Javascript, Swift, R
<b>Frameworks &amp; Databases</b>	React, Django, Flask, Spring, NodeJS, PostgreSQL, MongoDB, MySQL, Redis
<b>Cloud &amp; Development Tools</b>	AWS, Azure, Firebase, GCP, Selenium, Docker, Kubernetes, Cypress, Swagger, Git
<b>Data Tools &amp; Libraries</b>	TensorFlow, PyTorch, Pandas, Numpy, Transformers, D3.js, Vega-lite, Apache Spark
<b>Primary Areas</b>	Web Development, Mobile Application Development, Machine Learning, Data Visualization

## WORK EXPERIENCE

<b>Northeastern University, Oakland, CA</b> Graduate Teaching Assistant - CS 7295 Data Visualizations <ul style="list-style-type: none"><li>Support the professor in running usability experiments to assess the effectiveness of students' visualizations in real-world data analysis scenarios.</li><li>Evaluate assignments on creating interactive web-based visualizations and provide feedback to improve design efficiency based on best practices.</li><li>Conduct weekly office hours to assist graduate students with data visualization concepts &amp; tools like D3.js and Vega-Lite.</li></ul>	Sep 2024 - Present
<b>Chain-Sys Corporation, Chennai, India</b> Software Development Intern <ul style="list-style-type: none"><li>Developed and deployed a scalable job board application using the Spring Framework, MongoDB and Netlify, streamlining job postings for over 500 users with enhanced UI through Slickgrid and Thymeleaf integration.</li><li>Implemented Swagger documentation, improving API clarity and reducing development and testing time by 30%.</li><li>Optimized MVC functionalities for different user roles, leveraging IoC containers and Spring Security, to improve scalability and system security.</li></ul>	Jul 2024 - Aug 2024
<b>Logic Information Systems, Chennai, India</b> Software Development Intern <ul style="list-style-type: none"><li>Developed RESTful APIs for a retail management platform serving over 3,000 active users, achieving a 25% improvement in response times through optimized database queries and indexing.</li><li>Integrated AWS S3 for scalable storage of product descriptions and details, managing data for over 5,000 products.</li><li>Automated CI/CD pipelines with Docker and Kubernetes, enabling version-controlled deployments and cutting production release times by 30%.</li></ul>	May 2022 - Jul 2022
<b>Logic Information Systems, Chennai, India</b> Backend Development Intern <ul style="list-style-type: none"><li>Optimized database schemas for a high-traffic retail application, resulting in a 20% reduction in query execution time and improved user response rates during peak traffic.</li><li>Implemented caching strategies using Redis to enhance data retrieval speeds, leading to a 30% increase in data retrieval speeds.</li><li>Enhanced security infrastructure by integrating OAuth 2.0 for user authentication, safeguarding sensitive data and reducing unauthorized access attempts.</li></ul>	Sep 2021 - Oct 2021
<b>Sri Sivasubramaniya Nadar College of Engineering, Chennai, India</b> Full Stack Developer - Internally Funded Project by the Department of Computer Science <ul style="list-style-type: none"><li>Directed a team of four in the development of an educational portal, which successfully increased English language proficiency among 200+ rural students.</li><li>Designed and implemented key features of the portal using Django Framework &amp; PostgreSQL, optimizing deployment processes to reduce server and operational costs by 25%.</li><li>Conducted comprehensive user testing to drive iterative enhancements and optimize user experience.</li></ul>	Nov 2020 - Aug 2022

## PROJECTS

<b>Lockbox - Password Manager App (iOS)</b> <ul style="list-style-type: none"><li>Developed a secure password management app using Swift and Firebase, integrating geo-tracking via Apple Maps Kit to monitor password usage locations, enhancing security insights for users</li><li>Streamlined password storage and sharing by implementing encrypted storage and role-based access controls, achieving a 30% reduction in credential management errors.</li></ul>	Oct 2024 - Dec 2024
<b>Kanbas - Learning Management System (LMS)</b> <ul style="list-style-type: none"><li>Developed a fully functional learning management system (LMS) called Kanbas using React, Node.js and MongoDB, incorporating authentication, role-based access control and dynamic course association, enhancing course enrollment and quiz functionalities for 100+ users.</li><li>Implemented a data-driven UI for courses and quizzes, utilizing Redux for state management and reducing client-server data retrieval time by 20%, resulting in a seamless user experience for managing quizzes, courses and student progress.</li></ul>	Jul 2024 - Aug 2024
<b>Traffic Management System</b> <ul style="list-style-type: none"><li>Implemented vehicle detection using YOLOv4 and YOLOv8, achieving up to 98% accuracy in identifying vehicles, significantly enhancing the efficiency of real-time traffic management systems.</li><li>Applied deep learning models on standard GPUs, achieving vehicle detection and tracking with a processing time under 0.03 seconds per frame, thereby improving traffic surveillance and operational safety.</li></ul>	Mar 2024 - Apr 2024
<b>Stock Market Prediction &amp; Analysis</b> <ul style="list-style-type: none"><li>Created a machine learning-based stock market prediction system utilizing Long Short-Term Memory (LSTM) neural networks, achieving an impressive 94.6% accuracy in forecasting price movements over a six-month period.</li><li>Optimized the neural network to achieve an impressive 15% increase in prediction accuracy over traditional methods, resulting in more informed investment decisions.</li></ul>	Nov 2022 - May 2023