

SUMUKH M KULKARNI

Bangalore, Karnataka

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Education

RNS Institute Of Technology

Bachelor of Engineering in Computer Science [8.10/10.0]

Dec. 2021 – Dec. 2025

Bangalore, Karnataka

Relevant Coursework

- Data Structures
- Database Management
- Front-End Designing
- Full Stack Development
- Machine Learning
- Generative AI

Projects

AR Vision Therapy Website | *HTML, CSS, JavaScript, MongoDB, MediaPipe*

December 2024*

- Developed an interactive vision therapy web application designed to improve eye health through exercises such as focus training, saccades, and peripheral awareness.
- Integrated advanced gaze tracking capabilities using **MediaPipe** to monitor and evaluate user performance in real-time during exercises.
- Implemented a secure user authentication system leveraging **JWT** for session management and **MongoDB** for efficient and scalable user data storage.
- Designed a responsive and accessible frontend using **HTML**, **CSS**, and **JavaScript**, ensuring a user-friendly interface tailored for individuals with low vision.
- Created a robust backend architecture with **RESTful APIs**, enabling seamless communication between the client-side interface and the database.

[View Project](#)

FundVault | *HTML, CSS, JavaScript, ExpressJS, NodeJS, MySQL*

February 2024

- Developed a full-featured financial management web application that provides functionalities for budget planning, expense tracking, and financial goal setting.
- Architected the backend using **NodeJS** with a RESTful API design, facilitating seamless data transactions and CRUD operations. Utilized **MySQL** for relational database management, optimizing queries and indexing for efficient data retrieval and storage.
- Implemented a secure authentication and authorization system using **ExpressJS** and **JWT**, ensuring robust user data protection and session management. Integrated encrypted storage solutions for sensitive user information and credentials.

[View Project](#)

DhanRakshak | *Python, Machine Learning, Data Visualization, Visual Studio*

May 2024

- Developed an advanced machine learning solution for detecting fraudulent online payments, leveraging a **RandomForest Classifier** for high-accuracy classification of transactions as fraudulent or legitimate. Designed to tackle real-world challenges in financial fraud detection.
- Conducted extensive **data preprocessing** including handling missing values, feature encoding, scaling, and synthetic data generation using SMOTE to address class imbalance issues, ensuring the robustness of the model.
- Performed hyperparameter tuning with **GridSearchCV** to optimize model performance, achieving significant improvements in precision, recall, and F1 scores. Developed insightful visualizations with **Matplotlib** and **Seaborn**.

[View Project](#)

Zwigato | *HTML, CSS, TailwindCSS, JavaScript*

Sep 2023

- Designed and implemented a fully responsive and interactive web-based food ordering platform with a focus on user-centric design principles. Features a categorized dynamic menu, detailed product descriptions, and a streamlined order management system.
- Utilized **TailwindCSS** to build a responsive and mobile-first design, ensuring compatibility and optimal user experience across various devices. Implemented reusable UI components and custom animations to enhance visual appeal.
- Engineered a dynamic cart system using **JavaScript** and **localStorage** to manage user selections and orders persistently across sessions. Incorporated interactive forms with client-side validation and asynchronous updates using **Fetch API**.

[View Project](#)

Hierarchical Clustering Visualization | *OpenGL, C++, Visual Studio*

Apr 2024

- Developed a 3D interactive visualization tool in **OpenGL** to illustrate the step-by-step process of **Hierarchical Clustering**, enhancing understanding of clustering techniques through real-time graphical representation.
- Implemented dynamic centroid recalculation and color-coded clusters for enhanced differentiation and clarity, allowing users to visually comprehend the merging process and the formation of hierarchical clusters.
- Enabled user interactivity through keyboard and mouse controls for real-time exploration of clustering stages, including zoom, pan, and cluster depth adjustment.

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Certificates

NPTEL Online Certification

Jan 2024 – April 2024

Programming in Java

Bangalore, Karnataka

- Completed a comprehensive 12-week certification course in "Programming in Java" offered by NPTEL, focusing on foundational and advanced Java programming concepts.
- Gained proficiency in Object-Oriented Programming (OOP) principles, Java syntax and semantics, and data structures. Enhanced skills in handling exceptions, implementing multithreading, and working with Java APIs for robust application development.

[View Certificate](#)

AWS Academy Graduate - Cloud Foundations

Nov 2023

Cloud Computing and Services

Bangalore, Karnataka

- Achieved AWS Academy Cloud Foundations certification after completing a rigorous 20-hour coursework, providing a strong foundation in cloud computing concepts, AWS services, and cloud architecture best practices.
- Covered core AWS services such as EC2, S3, RDS, VPC, IAM, and Lambda, focusing on real-world application and cloud-based solutions development.

[View Certificate](#)

Python Core Certification by Sololearn

Sep 2024

Python Programming and Development

Bangalore, Karnataka

- Earned Python Core Certification, demonstrating expertise in Python programming fundamentals, object-oriented design, and efficient coding practices.
- Mastered essential Python concepts including data types, control structures, functions, modules, file handling, and error handling. Gained practical experience in writing, debugging, and optimizing Python programs.

[View Certificate](#)

NPTEL Online Certification

Jul 2024 – Sep 2024

Data Base Management System

Bangalore, Karnataka

- Completed an 8-week certification course in "Data Base Management System" offered by NPTEL, focusing on database concepts and applications.
- Developed knowledge in database modeling, SQL queries, and data consistency principles. Worked on creating and managing database structures and implementing CRUD operations.

[View Certificate](#)

Technical Skills

Languages: Python, Java, C, HTML/CSS, JavaScript, SQL

Developer Tools: VS Code, Eclipse, PyCharm, Visual Studio

Technologies/Frameworks: Windows, GitHub, MacOS, Microsoft Office

Extracurricular

AIKYA

Feb 2024 – Present

Co-Head of Graphics Team

RNS Institute Of Technology

- Have been an active member of the student club of the CSE department of RNSIT.
- Have been an integral part of 2 department fests organized by the committee

Brainwave Quiz Corp.

Sep 2023 – Present

Co-Founder

RNS Institute Of Technology

- Co-founded the RNSIT QuizCorp to incorporate quizzing culture in RNSIT.
- Have been a part of the organizing committee that has conducted many successful quizzes at college level