Ajjay Adhithya V

22BCE1250
Bachelor of Technology
in Computer Science Engineering
Vellore Institute of Technology, Chennai

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EDUCATION

Degree	Institute	Board / University	CGPA/Percentage	Year
B.Tech CSE	Vellore Institute of Technology, Chennai	VIT Chennai	8.97 (Till 5th Sem)	2022-2026
Class 12	Velammal Vidyalaya, Mel Ayanambakkam	CBSE	95.2%	2022
Class 10	Velammal Vidyalaya, Mel Ayanambakkam	CBSE	91.6%	2020

PROJECTS

- **Adaptive Traffic Signal Optimization Using Reinforcement Learning** *Sep 2024 - Nov 2024*
  Artificial Intelligence (AI) and Reinforcement Learning [Report Link](#)
  - This project focuses on optimizing urban traffic signal systems using Reinforcement Learning (RL) to address dynamic traffic flow challenges. By simulating traffic scenarios in Pygame, it combines a Random Forest Classifier for initial traffic predictions with Q-learning for adaptive and continuous signal optimization. Leveraging real-time and historical traffic data, the system dynamically adjusts signal timings to minimize delays and enhance traffic flow efficiency. Results show marked improvements in reducing waiting times and increasing throughput, showcasing the potential of RL-based solutions for modern traffic management.

- **Campus Recruitment Management System Using Oracle SQL** *Sep 2024 - Nov 2024*
  SQL, ORACLE Database and ORACLE SQL [Report Link](#)
  - A comprehensive platform designed to streamline campus recruitment processes, featuring dashboards for seamless interaction between students and recruiters, job postings and application management, and interview scheduling. The project was developed step-by-step, starting with identifying key entities and relationships, constructing an ER diagram, converting it into a relational schema, normalizing the schema from 1NF to 3NF, and finally implementing the system to deliver an efficient and user-friendly solution.

- **DevLab : Innovative Code Evaluation and Learning Experience** *Aug 2024 - Nov 2024*
  Amazon Web Services (AWS) and Full-Stack Development [Report Link](#)
  - I collaborated with my team to develop DevLab, an Ed-Tech Web Development Learning Platform designed to offer interactive, scalable, and personalized learning experiences. Leveraging AWS services, we ensured secure and efficient delivery of resources. My primary contributions focused on setting up DynamoDB for scalable storage of learning materials and user data, and utilizing AWS Amplify for seamless hosting and deployment of the platform. Together, we built a robust, future-ready system that integrates real-time coding challenges, personalized recommendations, and advanced analytics to enhance the learning journey.

- **Flappy Bird Game - Leaderboard Component Development** *Jun 2024 - Jul 2024*
  Front-End Development, React.js and Tailwind CSS [Game Link](#)
  - Collaborated with a team to develop the Flappy Bird game. Contributed to the front-end development of the leaderboard component, which displays player rankings dynamically. Designed and implemented features like a scrolling scoreboard and designated chart for the top three players. Ensured responsive design and user-friendly aesthetics to enhance the gaming experience.

- **News Aggregator Website with Dynamic Personalized Feeds Built Using MERN Stack** *Jun 2024 - Jul 2024*
  MERN Stack Development [Webpage Link](#)
  - This project presents a News Aggregator web application built with the MERN stack, featuring user authentication, personalized feeds, and real-time updates. The backend, developed with Node.js and Express, connects to MongoDB Atlas for user data and preferences. The React-based frontend includes a responsive Dashboard displaying news by user-selected categories and languages, dark mode, and translation features. The app ensures secure authentication and enhances user experience with a streamlined interface and loading animation during login.

- **Heart Rate Monitoring With Built-In GPS Module** *Feb 2024 - Mar 2024*
  Wearable Computing and Internet of Things (IoT) [Poster Link](#)
  - This project introduces a smartwatch designed for continuous heart rate monitoring and emergency notification via SMS. Integrated with a GSM module, the device sends real-time alerts when detecting abnormal heart rate fluctuations beyond preset thresholds. Additionally, the smartwatch displays XYZ coordinates and pulse rate on an OLED screen, providing users with vital health information at a glance. This innovative solution offers a compact and effective means of personal health monitoring and emergency communication, with potential applications in healthcare, fitness, and safety.

- **IoT-Driven Smart Irrigation with Moisture-Dependent Pump Control for Sustainable Agriculture**   *Aug 2023 - Nov 2023*
  Raspberry Pi, ESP32 Microcontrollers and Circuit Design   [Report Link]
  - This project focuses on addressing the challenges of water scarcity and unpredictable weather patterns in agriculture. The system utilizes IoT technology to optimize irrigation by integrating soil moisture sensors, threshold-based automation, and real-time rainfall forecasts. Data is transmitted to a cloud platform, enabling intuitive manual and automated pump control.

- **Comparative Analysis of IoT-based Blood Sugar Monitoring for Enhancing Diabetes Management**   *Aug 2023 - Oct 2023*
  This Proposal was accepted in 6th International Conference on Recent Trends in Advanced Computing (ICRTAC)   [Paper Link]
  - This paper presents a detailed study of exploring and developing an IoT based solution for continuous blood sugar monitoring in rural areas. The main motive is to provide cost-efficient, localized and to provide remote healthcare support to people using this. The limitations of each reviewed paper are also presented in this paper and a cost-efficient model for continuous blood sugar level monitoring is defined in this paper.

EXPERIENCE

- **India Space Lab (ISL)**   *Dec 2024 - Present*
  Winter Internship   Remote
  - Currently interning at India Space Lab, gaining hands-on experience in Advanced Drone Technology, CanSat and CubeSat satellite systems, Exoplanet Astronomy, and Space Entrepreneurship, building a strong foundation in innovative space technologies and business strategies.

- **Rotaract Club of VIT (Chennai Campus)**   *Sep 2024 - Present*
  Green Rotaractor   On-site
  - As a Green Rotaractor, I will contribute to community service projects, focusing on sustainability and social impact. I'll work with the team to organize initiatives that promote positive change while developing leadership and teamwork skills.

- **CodeChef VIT-Chennai Chapter**   *June 2024 - Present*
  Full Stack Web Developer   VIT-Chennai
  - As a Web Developer for CodeChef VIT-Chennai Chapter, I develop and maintain the club's website, ensuring it is user-friendly and up-to-date. I collaborate on innovative projects to enhance our online presence and provide technical support for events like coding competitions and workshops by creating event-specific pages and systems. My role focuses on improving user engagement and supporting our coding community's growth.

- **InstiBuzz**   *Aug 2024 - Present*
  Technical Team Member   Hybrid
  - As a Technical Team Member at Instibuzz, the all-in-one campus brand of IIT Madras, I focus on maintaining and optimizing the website to ensure smooth functionality, an engaging user experience, and a strong digital presence for the brand.

- **Ethnus Full-Stack Development (MERN STACK)**   *June 2024 - July 2024*
  Industrial Internship Trainee   Remote
  - During my recent remote industrial internship, I successfully developed a News Aggregator web app using the MERN stack. This project involved implementing real-time updates, user authentication, and personalized feeds, which allowed me to significantly enhance my skills in full-stack development. Additionally, I gained valuable experience in Agile methodologies, enabling me to efficiently manage and complete tasks within a collaborative team environment. CERTIFICATE LINK

- **CodSoft**   *June 2024 - July 2024*
  Web Development Intern   Remote
  - Successfully completed a 4-week virtual internship in Web Development at CODSOFT, where I designed and developed various projects using frontend technologies. I gained valuable experience in creating responsive and visually appealing user interfaces while honing my skills in Tailwind CSS. Throughout the internship, I collaborated closely with the CODSOFT team, contributing to the successful delivery of projects. INTERNSHIP CERTIFICATE

- **IEEE Computer Society VIT-Chennai**   *Oct 2023 - Jun 2024*
  Management Team Member   VIT-Chennai
  - As a Management Team Member of the IEEE Computer Society Club at VIT Chennai, I organize and manage events, workshops, and seminars to enhance technical skills. I facilitate communication and operations to ensure successful event execution and develop strategic plans to promote club activities and increase member engagement.

TECHNICAL SKILLS

- **Languages / Technologies** : Python, C/C++, Java, R Studio, Matlab, LT Spice, SQL, Oracle SQL, MERN Stack (MongoDB, Express, React, Node.js), Arduino Programming, AWS Services, Reinforcement Learning Frameworks
- **Frontend Web Development** : HTML, CSS, Bootstrap, Tailwind, JavaScript, React Library
- **Backend Web Development** : NodeJS, ExpressJS, MongoDB Atlas, Oracle SQL, REST APIs
- **Tools**: Visual Studio Code, Jupyter Notebook, Git / GitHub, Arduino IDE, Postman
- **Operating Systems**: Windows, Linux, MacOS & Android

Key courses taken

- **CSE & Mathematics**: Computer Programming: Python, Structured and Object-Oriented Programming : C/C++, Computer Programming: Java, Data Structures and Algorithms, Computer Architecture and Organization, Computer Networks, Web Programming, Design and Analysis of Algorithms, Operating Systems, Theory of Computation, Wearable Computing, Database Systems, Artificial Intelligence, Compiler Design, AWS Solutions Architect, Calculus, Differential Equations and Transforms, Complex Variables and Linear Algebra,Probability and Statistics, Discrete Mathematics and Graph Theory
- **Electronics and Communication**: Basic Electrical and Electronics Engineering, Digital Systems Design, Microprocessors and Microcontrollers

Certifications

- **Advanced Drone Technology (Air Taxi) Workshop**
  Completed the Advanced Drone Technology (Air Taxi) Workshop by India Space Lab, gaining insights into UAV design, programming, regulations, and the future of drones in AI. CERTIFICATE LINK
- **Rev Up Arduino - Level 1**
  Completed Level 1 of the 'Rev Up Arduino' program organized by the Robotics Club, VIT Chennai, acquiring foundational knowledge in Arduino programming, circuit design, and hardware interfacing through hands-on projects and practical applications. CERTIFICATE LINK
- **C Programming Certification**
  Successfully completed the C Programming Certification test organized at VIT University, Chennai Campus, with course material provided by the Spoken Tutorial Project, IIT Bombay. Achieved a score of 80.00% in the online exam conducted at VIT Chennai. CERTIFICATE LINK
- **C++ Programming Certification**
  Successfully completed the C++ Programming Certification test organized at VIT University, Chennai Campus, with course material provided by the Spoken Tutorial Project, IIT Bombay. Achieved a score of 80.00% in the online exam conducted at VIT Chennai. CERTIFICATE LINK
- **Python Programming Certification**
  Successfully completed the Python Programming Certification test organized at VIT University, Chennai Campus, with course material provided by the Spoken Tutorial Project, IIT Bombay. Achieved a score of 85.00% in the online exam conducted at VIT Chennai. CERTIFICATE LINK

Achievements

- Cleared the **INTER-SCHOOL LEVEL OF SPELL BEE INTERNATIONAL COMPETITION** and qualified for Regional/State level Competition for the academic year 2017-18.
- Secured a **Certificate of Perfect Score** for securing a centum in **Physics** during the final examination in Class 9.
- Secured **Certificate of Participation** for participating in the **FOREST TREK and MASS CLEANING CAMPAIGN** as a Scout, conducted in **Raj Bhavan, Chennai** in October 2018 on the occasion of the 150th birth anniversary celebration of Mahatma Gandhi.
- **RAJYA PURASKAR Awardee** as a scout in the Bharat Scouts and Guides for the year 2019.
- Secured **Certificate of Merit** for **Outstanding Academic Performance** and for being among the **Top 0.1 percent** of successful candidates in **Mathematics** in Class 10
- Secured **Centum in Computer Science (Python)** subject in Class 12 **CBSE Board Examination**,2022
- Successfully completed the **NPTEL** Online Certification course on **Wildlife Ecology** with an Elite **Top 1 percent distinction**. Achieved a perfect score of **100 percent**, excelling in both online assignments (25/25) and the proctored exam (75/75).