Allen Jonathan David

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Education

Vellore Institute of Technology, Vellore
Bachelor of Technology - B.Tech — **Sept 2021 - June 2025**

- Major in **Electronics and Communication Engineering.**
- ECE Coursework: Embedded Systems, Digital Systems Design, VLSI Design, Microcontrollers/Microprocessors, Computer Networks, Wireless and Optical Communication, Circuit Theory.
- Programming Coursework: Python, Java, Embedded C programming, Data Structures and Algorithms, Cryptography and Network Security, Artificial Intelligence and Machine Learning, Robotics and Automation.

Experience

Django Software Foundation
Google Summer of Code 2022 Contributor — **June 2022 - Sept 2022**

- Added a new feature to the Django's Lookup API to enable more precise control over model lookups by supporting the registration and unregistration of custom lookups on a model's individual Field instances (database attributes)
- Additionally added support for performing KeyTextTransform on a JSON field from a lookup call.
- Involved pull requests, code reviews, unit testing and documenting all the new bug fixes or features that were added.
- **Received a stipend of $3000 from Google** for the **open source contribution** to Django Software Foundation. Enhanced the experience of thousands of developers who use the Django framework.

  Skills: Django, Version control (Git and Github), Object-Oriented Programming, mySQL, PostgreSQL, Unit testing.
  Project Link: Google Summer of Code - Per-Field Instance Lookups

National Institute of Ocean Technology, Chennai
Embedded Systems Intern — **Sept 2023 - Nov 2023**

- Constructed a prototype **embedded system for an underwater suit** for use in deep sea exploration using ESP32s microcontrollers, sensors and LED displays to monitor the vital signs of the user of the suit.
- Hosted a server using Xampp with a web interface for the received data to be accessible to the entire network. Master-slave configuration of ESP32s was done for easy user control.
- The project was executed under the guidance of a senior-grade scientist.

Leveraged Knowledge: Arduino IDE, ESP32, C/C++, Communication protocols(I2C, SPI, UART), Xampp(hosting), PHP.

Personal Projects

- **Lyrics Search and Display Web Application:** Built a dynamic full-stack application designed to provide lyrics search and display functionality optimized for singers.
- Integrated with the Spotify API to allow users to search for songs in real-time. To fetch lyrics, implemented a custom web scraping solution using Axios (interacting with APIs) and Cheerio (web scraping), which automates the process.
- Developed an auto-scrolling feature tailored for singers, so the lyrics scroll automatically while performing. Users can also adjust the text size to ensure clear visibility during performances, enhancing the overall user experience and making it ideal for live settings.

Technologies Used: Node.js, Express, EJS, Axios, Cheerio, HTML, CSS, JavaScript.
Project Link: LedLyrics Web App

- **Chess Game Desktop Application:** Created a complete desktop chess application using Python and Pygame, allowing two players to play against each other without using any external chess libraries.
- Designed an easy-to-use piece movement system that works with both the keyboard and mouse. The game includes all important rules like en passant, castling, and pawn promotion, making it feel like a real chess game.

Technologies Used: Python, pygame.
Project Link: Chess Desktop App

Skills

- Programming Languages: Python, C/C++, HTML/CSS, JavaScript, Assembly, Verilog, MySQL, Matlab.
- Technical Skills: Django, Version control - Git and Github, Node.js, Express.js, Windows CMD, SQL, Unit Testing, Embedded Systems.

Hobbies: Football, Guitar, Music

Languages: English, Tamil.