Alejandro Serna

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EDUCATION

New Jersey Institute of Technology – Ying Wu College of Computing   Newark, NJ
Bachelor of Science in Computer Science | GPA: 3.3   *May 2026*
Honors: Dean's list (Fall 2023, Spring 2024, Fall 2024)
Relevant Coursework: Data Structures & Algorithms | Programming Language Concepts | Intensive Programming in Linux | Principals of Operating Systems | Introduction to Computer Networks | Foundations of Computer Science | Introduction to Data Science | Internet Applications | Computer Systems and Networks | Probability and Statistics

KEY SKILLS

Programming Languages: C, C++, Python, Java, Bash, JavaScript, PHP, SQL, MongoDB, HTML, CSS, Assembly
Frameworks & Tools: Linux, Windows, MacOS, Git, Google Colab, Vim, VS Code, PyCharm, IntelliJ, CLion
Libraries: Pandas, NumPy, Matplotlib, Plotly, Dash, Flask, SpotiPy, OpenCV, Tkinter, Requests, OS
Languages: Fluent in English and Spanish

PROJECTS

PiTunes | *Raspberry Pi, Spotify API, Spotipy, MFRC522, Python*   Nov. 2024 – Jan. 2025
- Engineered a customizable music player powered by a Raspberry Pi and Spotipy, integrating RFID stickers to enable seamless, touch-free music selection and playback.
- Designed and deployed Python scripts on the backend to efficiently connect to the Spotify API, handling user input, and an interactive user-friendly GUI.

Personal NAS Server | *Flask, HTML/CSS, Linux, Python, JavaScript, Bash*   Jan. 2025 – Mar. 2025
- Created a lightweight, custom NAS (Network-Attached Storage) system using an old PC running Linux, with a Flask-based backend and a HTML/CSS/JS interface with secure credential handling, and file access.
- Configured automatic server startup on boot and implemented file search, sorting, authentication, and upload/download/delete features to enable browser-based file management over local and remote networks.

AI Car Detection | *OpenCV, Haar Cascade, Python*   Sep. 2024 – Nov. 2024
- Built an AI-powered car detection system using Python and OpenCV to analyze and process video input, enabling automated vehicle recognition and tracking.
- Implemented a Python script that applies image processing techniques and real-time data visualization, accurately identifying and tracking vehicles within the video frame.

Recursive Descent Parser | *BNF Grammar, Git, Java, C++*   Jul. 2024 – Aug. 2024
- Developed a recursive descent parser in both Java and C++, capable of efficiently analyzing and interpreting input based on a defined grammar structure.
- Optimized the parser to accurately process arithmetic expressions, unary operations, and variable assignments, ensuring proper syntax validation and expression evaluation.

EXPERIENCE

Technology Intern   Sep. 2024 - Present
THOF Inc   *Jersey City, NJ*
- Designed and developed the organization's first website, improving accessibility, which resulted in a 20% increase in client outreach and improved engagement.
- Managed IT infrastructure, overseeing updates, security compliance, and network operations; deployed a wired office network from the server room, routing connections from the router to switch through a structured patch panel to wall-mounted Ethernet ports—increasing network reliability and speed across the office by 25%.

Inventory Control Coordinator   Jun. 2021 – Jul 2023
CompoSecure   *Somerset, NJ*
- Resolved inventory discrepancies by investigating missing products and correcting recordkeeping errors.
- Managed high-volume stock transfers, ensuring accurate labeling, detailed inspection, and timely replenishment of incoming inventory.