

Benjamin Aleman

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EDUCATION

Texas A&M University

Bachelor of Science in Computer Science, Minor in Music Technology (GPA 3.8)

College Station, TX

Aug. 2023 –

University of Dallas

Dual Credit Program

Irving, TX

Aug. 2022 – May. 2023

Cistercian Preparatory School

High School Diploma

Irving, TX

Aug. 2019 – May 2023

TECHNICAL SKILLS

Coursework: Linear Algebra, Discrete Structures for Computing, Program Design & Concepts, Data Structures and Algorithms, Programming Languages, Computer Organization

Languages: Python, C++, TypeScript, JavaScript, HTML/CSS

Frameworks & libraries: React, Flask, JUCE, pandas, NumPy, OpenCV

Developer Tools: Git, VS Code, PyCharm, Spyder, Visual Studio

INVOLVEMENT

Clubs: Aggie Coding Club, Texas A&M Computing Society, Tamusic Club

- Geared towards contribution, leadership, and development in computer science
- Fostered relationships with students from diverse backgrounds
- Organized multiple projects, advancing collaboration and the development of several skills

PROJECTS

CV-Theremin | C++, JUCE, OpenCV

November 2024 – December 2024

- Developed a working music application that functions similar to the theremin as an instrument, allowing users to create music with hand gestures through a camera
- Implemented hand tracking by using OpenCV, leveraging contour detection and frame masking for motion recognition
- Utilized the JUCE library to generate a dynamic sine wave, enabling real-time modulation of pitch and velocity through various hand motions

DummyStocks | TypeScript, Python, React, Flask, OpenAI, pandas

November 2024

- Developed an interactive website that promotes financial literacy among the general public
- Integrated dynamic data visualization, featuring a graph that displays a random selection of the top-performing stocks
- Implemented a search bar with web scraping capabilities to retrieve and display relevant articles on stock trends
- Using a large language model (OpenAI), developed and simplified financial articles to ensure the preservation of its original tone, context, and language nuances
- Created for the 2024 TAMU Datathon

Monophonic Synthesizer | C++, MaxMSP

January 2023 – May 2023

- Designed and developed a fully customizable synthesizer with a built-in ADSR (Attack-Decay-Sustain-Release) module
- Gained in-depth understanding of how oscillators function, and became proficient in various synthesis techniques that are possible between them
- Presented a personal account and extensive findings to an audience of experts in the audio programming field