JACK W. STOLTZ

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EDUCATION

Georgia Institute of Technology, College of Engineering   Atlanta, GA
Bachelor's of Science in Computer Engineering, **GPA: 4.0/4.0**   *May 2027*
Concentrations: Information Internetworks & Distributed Systems and Software Design
Relevant Coursework: Object-Oriented Programming, Data Structures & Algorithms, Machine Learning.

EXPERIENCE

SA-DA Architecture | Brooklyn-Based Firm   *June 2023 – August 2023*
Computer Builder   *Brooklyn, NY*
- Optimized technical issues regularly and provided general IT services to architects at office.
- Built 15+ high-performance rendering computers for staff as needed.
- Inspected faulty computer parts and decided on adequate replacements to install.

Qwzrd | Educational Tech Start-Up   *June 2022 – August 2022*
Front End Software Developer Intern   *Brooklyn, NY*
- Designed and programmed prototype variable creation tool for translating users' word problems into mathematical terms using **React** and **HTML/CSS**, used and expanded upon by software engineering team of 10, currently used by 25+ Qwzrd beta testers.
- Researched applications of tech in online educational environments to determine features to implement or avoid.

PROJECTS

HermeDoc | Secure RAG Application   *October 2024 - November 2024*
- Engineered an offline full-stack app that implements a **RAG query model** for industries that can't integrate LLMs because of security concerns such as the DoD, allowing them to safely upload private contextual data and utilize a chatbot trained locally.
- Leveraged **LLAMA-3** for local LLM processing ensuring data privacy, employed the **Hugging Face library** to create embeddings based on user-uploaded contextual data, managed vector database with LlamaIndex.
- Utilized **React** and **Flask** for a seamless UI and to effectively interface model with user-specified queries for precise answers.

NextRead | Book Management Application   *September 2024 - November 2024*
- Developed **full-stack** web app for users to get personalized book recommendations based on previous reads they added.
- Implemented the OpenAI API in **Flask** to generate accurate responses for users using its advanced NLP capabilities.

Robotic Hammer | Motion-Controlled Arduino Project   *October 2024 - November 2024*
- Used computer vision concepts to build hammer responsive to hand movements on laptop camera in real time.
- Utilized **Python**, **OpenCV**, and **MediaPipe** for hand tracking and gesture recognition, integrated with the **Arduino** IDE programmed in **C++** for hardware control, the hammer's axies were implemented with servo motors.

Sentiment Analysis | Text Sentiment Classification   *August 2024 - September 2024*
- Programmed web app that analyzes user input and determines its tone, visualized to user on histogram.
- Implemented Multinomial Naive Bayes ML model with **Scikit-learn** in **Flask** trained on the IMDB 50k movies reviews dataset.
- Used **Node.js** to design simple GUI and Plotly.js to clearly display sentiment probability with bar chart and exact numbers.

LEADERSHIP

GT Silicon Jackets | Semiconductor Design Team   *August 2024 - Present*
Member   *Atlanta, GA*
- Student-run organization modeled after chip companies that designs a functional semiconductor from scratch to tape-out.
- Part of digital design sub-team, using **System Verilog** to program modules later tested by verification team and implemented.

New York Edge | Non-Profit Educational Program   *May 2024 - August 2024*
STEM Teacher   *Queens, NY*
- Taught class of 25 students fundamental STEM/programming concepts with **JavaScript**, **Python**, and essential mathematics.
- Guided students through coding personal capstone projects and emboldening them toward pursuing computer science further.

SKILLS

Software: Java, Python, JavaScript, C++, C, HTML, CSS, SQL, PostgreSQL, ReactJS, Command Shell, System Verilog, LLAMA-3
Frameworks & Services: React, Node.js, React Native, MATLAB, LaTeX, Flask, Bootstrap, NLTK, AWS, Hugging Face, Django
Developer Tools: Git, Github, Trello, Figma, Docker, Vim, Vite, Spring Boot, Expo
Fundamentals: Algorithms/Data Structures, OOP, Digital Design, Machine Learning, RAG, Microsoft Office