Gordon Stein

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SUMMARY

Experienced software developer and researcher with a PhD in Computer Science, specializing in human-centered applications of AI, educational technology, and full-stack development. Developed web-based applications using JavaScript/TypeScript, HTML, CSS, AWS, and modern frameworks. Eager to apply expertise in AI integration and collaborative design to enhance accessibility and user experience.

EXPERIENCE

VANDERBILT UNIVERSITY | Postdoctoral Scholar

May 2024 - Present | Nashville, TN

- **Project: AI-Powered Interview Platform**
  - Developed a full-stack platform using TypeScript, Svelte, Postgres, Supabase, and Vercel to automate qualitative interview process, enhancing data collection and reducing potential bias
  - Led the IRB approval process, ensuring ethical design and responsible data management for student participants
- **Project: Custom Language Models for Education**
  - Trained and fine-tuned custom language models using PyTorch and Unsloth for applications in K-12 education
  - Designed Python pipeline for dataset cleaning, ensuring appropriate content and improving model accuracy and reliability
- **Project: AI Ethics Educational Game**
  - Designed and developed an educational game in Svelte and Rust to teach machine learning and AI ethics to elementary school students, enhancing their understanding of complex concepts with engaging content
  - Built a browser-based interface with Tensorflow.js to simplify training transfer learning models for image classification, making model training and evaluation accessible to young students
  - Collaborated with team members using Git with CI/CD through GitHub Actions, successfully deploying to AWS EC2 instances, streamlining development process and deployment efficiency
- Developed an agent-based AI assistant system within a block-based programming environment to provide real-time coding support aligned with pedagogical goals
- Built a prototype VR generative AI studio application in Unity, with mutli-modal input/output, including code generation
- Designed and implemented block-based interfaces for real-time gesture recognition, making complex ML techniques accessible to K-12 students
- Created RAG-based chatbot using Chroma vector database, enabling literature-grounded philosophy discussions
- Developed interfaces and APIs for text-to-image and code generation by users in VR headsets
- Trained audio embedding and classification models using PyTorch for embedded bioacoustics project
- Created Max/MSP patchers and C# components for OSC control of CAVE VR audio system from Unity applications

VANDERBILT UNIVERSITY | Research Assistant

May 2018 - May 2024 | Nashville, TN

- **Project: Educational Robotics Simulator (Ph.D. Dissertation)**
  - Architected a novice-friendly, networked robotics simulation, with work published in *Education Sciences* and *Frontiers in Computer Science* journals
  - Engineered the networked simulation server and API in Rust and deployed it to an ECS cluster, with a WebAssembly-based client
- **Project: NetsBlox Cloud Platform Services**
  - Contributed to the design and user experience of "Code to Joy," an NSF VITAL Prize Challenge finalist
  - Engineered new microservices for the NetsBlox platform using Node.js, extending capabilities for IoT and education
  - Integrated third-party hardware, including Anki Vector and ESP32-based robots, into the cloud environment
- Prototyped a mixed reality robotics platform, combining physical robots with virtual environments to create novel learning experiences

LAWRENCE TECHNOLOGICAL UNIVERSITY | Senior Lecturer

Aug 2016 – May 2018 | Southfield, MI

- Authored and taught courses on emerging technologies, including Virtual Reality with Unity and Cybersecurity
- Mentored and advised senior-level student projects from concept to completion, resulting in successful implementations of practical applications

EDUCATION

VANDERBILT UNIVERSITY

Doctor of Philosophy in Computer Science
May 2024 | Nashville, TN
Thesis: A Novice-Friendly Networked Educational Robotics Simulation

LAWRENCE TECHNOLOGICAL UNIVERSITY

Master of Science and Bachelor of Science in Computer Science
May 2016 | Southfield, MI
GPA: 3.9 / 4.0
Minor in Physics

SKILLS

PROGRAMMING

C • C# • JavaScript/Node.js • Python • Rust • C++ • Java • PHP • SQL • TypeScript • HTML5

TECHNOLOGY

AI/ML • Arduino • AR / VR / MR • AWS • CSS • Docker • Git / GitHub • LangChain • Large Language Models • Linux • MongoDB • MySQL • NoSQL • OpenCV • OpenAI API • PyTorch • Prompt Engineering • React • SQLite • Svelte / SvelteKit • TeX • Unity

SOCIETIES

Association for Computing Machinery (ACM)

Institute of Electrical and Electronics Engineers (IEEE)

IEEE Computer Society

LINKS

https://github.com/gsteinLTU/

https://www.linkedin.com/in/gordon-stein/

https://www.gordonstein.dev