Arnold Venter

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Education

University of Texas at Austin May 2025
Bachelor's in Electrical and Computer Engineering *GPA: 3.91/4.0*

Relevant Coursework

Courses: Relevant Courses: Object Oriented Programming • Software Design • Computer Graphics Hon • 2-D Game Design Capstone • Operating Systems • Embedded Systems Lab • Computer Architecture

Work Experience

Honeywell | *C/C++, Embedded Systems, Python, Bash* May 2024 - Aug 2024
Platform Software Engineering Intern

- Extended flight deck compatibility by **refactoring HAL**, **OS** layer code to eliminate customer integration barriers
- Ensured multicore **system integration** through extensive **testing**, tooling improvements, and modular dependency analysis for code base of **100+ modules used across diverse pool of hardware configurations**

Apple | *Python, Tkinter, Matplotlib, C++, Project Design* May 2023 - Aug 2023
GPU Architecture Validation Intern

- **Streamlined GPU validation testing** by **proposing and developing a GUI** that simplifies starting testing jobs, persistently logs debugging information, and displays test coverage and resource allocations in real-time
- **Bolstered targeted GPU randoms testing efficacy** by developing an **adaptive, constraints-driven test selection algorithm** that considers user goal coverage and historical test performance
- **Improved test generation feedback** by logging the distribution of various tests' feature coverage, time requirements, pass rates, and causes of failure

Trend Micro | *C, Python, Verilog, System Debugging, Documentation* Jun 2022 - Aug 2022
Firmware Engineering Intern

- Brought up **I2C and Ethernet** on FPGA using **C and Verilog** and wrote BMC functionality testing scripts
- **Documented and debugged** communication protocol implementations using software tools and oscilloscope

Azoteq | *C, Python, Embedded Systems, Project Design* Jan 2022 - May 2022
Applications Engineering Intern

- **Expanded IC testing capabilities** by designing and constructing environmental chamber with $1000 budget
- Improved chip usability by creating **IC demo code**, a **circuit design GUI using PyQT**, and example projects

Projects

Gameboy Architecture Emulator | *C, Embedded Systems, Computer Arhitecutre* March 2024 - May 2024

- Emulated Sharp SM83 CPU, GPU, and audio unit across 3 TM4C129s to maximize parallelization
- **Wrote LCD drivers** and designed novel comm protocols to accommodate **memory and timing constraints**
- Successfully **booted Tetris ROM** and ran a game we designed in **Gameboy ASM**

Data Entry Web Platform | JavaScript, React, Firestore, Node.js, RESTful API Jan 2024 - May 2024

- Created SPA using React with Firestore as backend to consolidate volunteer-sourced data using Sheets API
- Accelerated volunteer data entry by 500% by pre-populating entry fields using analysis and LLMs on source data

Prometheus Unbound (Published Video Game) | *C#, Software Arch, Teamwork* Aug 2023 – Jan 2024

- **BAFTA game awards** longlist (top 10 in global competition) Stealth Platformer developed using **C# in Unity**
- **Led art and game mechanic integration** and implemented versatile in-game **cutscene system**
- **Rapidly iterated on** game mechanics and in-house visual and audio FX based on weekly playtest feedback

Procedurally Generated Minecraft | *TypeScript, WebGL, Software Architecture* Apr 2022

- Developed Minecraft-inspired game with procedural terrain and texture generation
- Implemented persistent terrain modification on memory and processing constrained web environmenet

Skills

Languages: C/C++, Python, C#, TypeScript, JavaScript, Java, WebGL, Verilog
Tools: Git/GitHub, Unity, GDB