Jayson Gazeley

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Dear Hiring Manager at [Company Name],

I am writing to express my strong interest in the Embedded Developer position. My background as a Computer Engineering student is uniquely complemented by a proven ability to design, build, and debug hardware systems from the ground up, and I am eager to apply this practical experience to your engineering team.

A successful embedded developer needs to bridge the gap between hardware and software. Here is how my experience aligns with that requirement:

- **Hardware Design and Prototyping** At a personal level, I have taken multiple projects from concept to market, including an N64 cartridge reader for which I designed and laid out a custom PCB in KiCad, assembled the boards with SMD hand-soldering, and modeled the enclosures.

- **Bare-Metal Firmware Development** I have extensive experience writing low-level C/C++ and Assembly firmware for microcontrollers like the RP2040 and ATmega/AVR. This includes implementing communication protocols like I2C and SPI from scratch and directly manipulating hardware registers to control peripherals.

- **Full Systems Integration** For my N64 reader project, I integrated all components into a functional commercial product, implementing a TinyUSB-based mass storage interface for seamless PC connectivity.

- **Diagnostics and Troubleshooting** I am proficient in using oscilloscopes, logic analyzers, and multimeters to debug embedded systems at the component level. My experience includes performing root-cause analysis on complex electromechanical systems to identify and resolve failures.

I am finishing my computer engineering degree on a part-time schedule, which allows me to maintain a strong focus on professional work. I have a genuine passion for building efficient, low-level solutions and making hardware come to life with software. I look forward to the chance to contribute to your projects and help develop robust and innovative products.

Thank you for your time and consideration. I would welcome the opportunity to discuss how my hands-on engineering skills can benefit [Company Name].

Sincerely,

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Professional Summary

- Proven ability to take hardware projects from concept to market, with expertise in custom PCB design, bare-metal C/C++ firmware, and full systems integration.
- Seeking an embedded developer role to apply deep skills in hardware prototyping, low-level programming, and diagnostics.

Technical Skills

- **Hardware Design & Prototyping**: Custom PCBs, soldering (SMD, THT), custom enclosures and fixtures, analog front-end design and signal conditioning.
- **Embedded Firmware & Systems Integration**: Bare-metal C/C++ and Assembly firmware for microcontrollers including RP2040, ATmega/AVR, and PIC. I^2C, SPI, UART, and custom one-wire communication protocols.
- **Diagnostics, Test & Analysis**: Component-level debugging, root-cause analysis (embedded and electromechanical systems). Multimeters, oscilloscopes, and logic analyzers for testing and validation. Lab data acquisition and formal report write-ups.
- **CAD, Software & Tools**:
  - **CAD**: KiCad, FreeCAD, AutoCAD
  - **Languages**: C/C++, Python, Assembly, Java
  - **Software**: MS Office Suite, Pro Tools, Adobe Audition, Adobe Photoshop

Projects

N64 Cartridge Reader & Save Manager   ⌨ github.com/jgazeley/n64cartreader
- Managed the full lifecycle of a commercial product, taking the initial ATmega2560-based design from a custom PCB to manufacturing and selling over 100 units.

8-bit Hardware Arithmetic Unit (Adder/Subtractor)   ⌨ github.com/jgazeley/light-sensor
- Designed and built a mixed-signal hardware calculator from scratch, successfully integrating an analog front-end with a digital processing backend built from discrete logic gates.

Education

San José State University, San José, CA
B.S. in Computer Engineering   *Expected 2027*

Sierra College, Rocklin, CA
Lower Division Coursework   *2021 – 2025*

Work Experience

SKY ZONE, Los Angeles, CA
Contributed to over 300 successful installations worldwide, progressing through four roles of increasing responsibility from *Installer* to *Superintendent*.

Superintendent   *2017 – 06/2020*
- Bridged the gap between corporate engineering and on-site execution, serving as the lead technical contact for franchise partners, project managers, and general contractors on domestic and international projects (Canada, Mexico, Australia, UK).
- Collaborated directly with the engineering team to inform the design, prototype, and field-implementation of new recreational systems and safety features.
- Validated final installations against all technical and safety specifications.

Assistant Superintendent   *2015 – 2017*
- Managed key on-site logistics, including the scheduling of temporary labor and rental of heavy equipment.
- Managed and maintained a large arsenal of installation tools and a fleet of trucks and trailers for North American projects.