Embedded Engineer

Metro-Detroit based startup is looking for an experienced embedded systems engineer. Major tasks would include development of firmware (C code) and/or FPGA (VHDL) code for a range of high performance embedded systems. Other tasks would include design and development of software and potentially hardware for an open source whole house audio system based on a Raspberry Pi.

Job Duties

You will work in a collaborative environment with almost zero bureaucracy and few meetings. Your primary duties will be C firmware development and FPGA hardware design and verification. There will be additional opportunities to do Python application development, schematic capture and layout, along with various other engineering tasks. We understand you may not have all of these skills so we will have experienced mentors for assistance. You will work on multiple concurrent projects, with a mix of small, short, quick-turn projects and more extensive, long-term projects.

Useful technical skills (note that experience in all these areas is desirable, but not required):

- Embedded coding in C, including hardware interfacing
- Experience with standard embedded communication protocols; I2C, SPI, I2S
- Experience with Linux, specifically shell scripting and audio with ALSA
- Basic hardware knowledge: Schematic review
- Experience with coding in Python
- Experience with version control systems (Git, SVN)
- Experience with digital logic design in VHDL and/or Verilog.

Bonus skills:

- Hardware component selection
- Board design with Altium
- Mobile App development experience
- Web development experience
- Compliance testing for consumer electronics (EMC, UL, CE, etc)

High Performance Embedded Systems

A typical embedded system we work with runs a C application on FreeRTOS or Linux and interfaces with one or more hardware modules designed in VHDL on an Xilinx SoC such as the Zynq and Ultrascale+ ICs. The hardware modules are mostly used for high speed data ingestion and initial processing, whereas the CPU is used for high-level control and configuration.

Whole House Audio

Our open-source AmpliPi home-audio system is a Python web application with low-level audio hardware control, running on a Debian-based operating system. All of the source code and schematics for the system are provided on GitHub. Ongoing development on this project involves web application design, streaming provider integrations, and new hardware bring up and testing. Check out our project at https://github.com/micro-nova/AmpliPi

Why MicroNova?

MicroNova is based in Waterford, MI. We are a group of friends with an academic background that started the company in 2012. Our primary focus, embedded systems contract work, spans a wide range of industries such as R&D, Automotive, Oil & Gas, Audio, and Defense. We also launched our open-source whole-house audio system on Kickstarter and are currently working with distributors to reach a broader market.

Interested in applying? Email us at contact@micro-nova.com!