Systems Engineer

Company Overview

Based in the heart of the Silicon Slopes, Inertial Sense is making precision and autonomous navigation so easy it can be included in nearly any type of device — because the world is moving on its own. Everything from drones and robots to self-driving lawn mowers and autonomous cars needs a low-cost navigation and autonomy solution. We've developed the world's smallest and lowest cost GPS aided Inertial Navigation module and are developing supporting solutions to bridge navigation into GPS-denied environments.

Position Summary

We are looking for a passionate, jack-of-all-trades code guru to help develop, test, and maintain our suite of navigation products, with an emphasis on embedded Linux architecture for real-time navigation applications on single board computers (Jetson, Rpi, etc) and microcontrollers (STM32, ARM, Arduino), working tightly with other engineers and integrating navigation, application, tooling, and analysis software. You'll be testing and improving system performance of existing navigation products as well as designing and developing future product solutions. You are comfortable managing multiple related technical projects. Self-directed, but knows how to participate in a team environment, bringing out the best of your co-workers.

Responsibilities

- **Design and implement software of sensor-fusion for navigation in embedded devices.**
- Proactively ensure the highest levels of system performance and reliability.
- Monitor and test application performance for potential bottlenecks, identify and implement solutions.
- Lead and support integration into customer products.
- Coordinate and support product development, testing, and readiness.
- Liaise with customers and distributors for problem resolution.

Required

- Solid software design and architecture principles. Gang of 4. Appreciates the delicate balance of software complexity, performance, stability, and coupling. 2-5 years.
- C/C++. Understands the value of good OO design but appreciates that not everything has to be (or should be) built for OO. 3-5 years.
- Passionate about technology, navigation (where you are in the world), and perception (of the things around you). We are passionate about what our products can do and are always thinking of ways we can make them better. You should too.
- Comfortable in multiple OSs, and working in different environments, and with different toolchains. We all have our preferences, and you can too, but even if you're a Windows guy, you should be ready to jump into Linux at a moment's notice, to troubleshoot, validate, etc. Same for VS-Code, Clion, or Eclipse.
- Practical Electrical Engineering sense. Even if you've never designed your own PCB before, you should have some experience using logic probes, multimeters, oscilloscopes, etc. You should understand the concepts of Ohm's law, and basic digital signaling (HI, LO, pullups, tri-states, etc).

Preferences

- System hardware/software architecture
- Real-time embedded Linux applications
- Library and API development
- Linux OS kernel customization
- ARM Cortex Microcontrollers (32 and 64-bit)
- Zephyr and FreeRTOS
- Knowledge of Low-level drivers, hardware peripherals
- Comms: UART, SPI, I2C, USB, CAN
- DMA, timers, interrupts, GPU
- In-circuit debugging
- Signal processing
- Extended Kalman Filters
- GPS and RTK principles and operation
- Optimization
- Systems engineering
- Schematic and PCB design
- Unit and continuous integration testing
- Systems integration and engineering
- Linux, Windows, Mac
- Python
- Embedded systems

Benefits and Perks

- Utah - "Life Elevated" - skiing, biking, hiking - outdoor galore
- Paid holidays, Flexible PTO policy
- 100% coverage for medical benefits
- Wear many hats and be a part of an aggressive startup working to bring intelligent navigation solutions to our customers.