Job Title: Senior GNC Engineer

Location: Provo, Utah (Hybrid/Remote options available)

About Us

At **Inertial Sense, Inc.**, we design and manufacture advanced GNSS/INS and autonomy solutions that power UAVs, robotics, ground vehicles, marine systems, and defense platforms. Our products integrate cutting-edge inertial sensors, GNSS receivers, and sensor-fusion algorithms to deliver robust navigation in the most challenging environments.

We are seeking a **Senior GNC Engineer** to drive the development of guidance, navigation, and control algorithms—bridging the gap between theoretical estimation and real-world embedded implementation. This role combines deep expertise in GNSS/INS integration with hands-on experience in embedded hardware, flight testing, and customer-facing applications.

Responsibilities

- **Design, implement, and test GNC algorithms** with emphasis on:

    - State estimation and multi-sensor fusion (EKF, UKF, factor graphs, optimization frameworks).

    - Robust navigation in GNSS-degraded or denied environments (vision, radar, LiDAR, Doppler aiding).

    - Guidance and control laws for UAVs, marine, and autonomous ground systems.

- **Develop and optimize C/C++ code** for real-time embedded targets, ensuring performance and reliability.

- **Evaluate and demonstrate sensor fusion performance** using Inertial Sense products in customer-relevant applications.

- Conduct **simulation, hardware-in-the-loop, and field testing** of navigation and control algorithms.

- Collaborate with **embedded hardware, firmware, and applications engineers** to deliver integrated autonomy solutions.

- Provide **technical leadership and mentorship**, guiding junior engineers and supporting cross-team efforts.

- Partner with customers during **integration projects, demonstrations, and field trials**, ensuring navigation performance meets mission requirements.

Expectations

- **Problem-Solver's Mentality**: You love tackling tough problems and are driven to think outside the box to find creative solutions. Your "hacker mentality" keeps you curious and excited about overcoming obstacles.

- **Solid Software Engineering Practices**: You have a strong foundation in software architecture and a passion for building maintainable, scalable systems. You're comfortable applying design patterns, like those from Gang of Four, to solve complex challenges.

- **Adaptable & Self-Driven**: You thrive in a dynamic environment, wearing multiple hats as needed. You manage your time effectively, switch gears seamlessly, and stay motivated to drive projects forward with minimal oversight.

Required Qualifications

- MS or PhD in Aerospace, Mechanical, Electrical, or Computer Engineering (focus on controls, robotics, or navigation).

- **7+ years of experience** in guidance, navigation, and control algorithm development for autonomous or safety-critical systems.

- Proficiency in **C/C++ for embedded systems**, with real-time and flight-critical software experience.

- Strong background in **nonlinear estimation, control theory, and sensor fusion for GNSS/INS systems**.

- Direct experience with **embedded hardware, real-time operating systems, and sensor integration**.

- Hands-on experience with **MATLAB/Simulink, Python, ROS/ROS2**, or similar simulation/test environments.

Preferred Qualifications

- Expertise in **GNSS-inertial navigation, SLAM, or GPS-denied navigation**.

- Familiarity with **factor graphs, optimization frameworks** (GTSAM, CERES), or advanced control methods (MPC, LQR).

- Test experience with **UAVs, marine vessels, ground robots, or defense/autonomy systems**.

- Knowledge of **safety-critical standards** (DO-178C, ISO 26262, or similar).

- Proven track record of **technical leadership** in small, fast-paced engineering teams.

About Inertial Sense

- Work on **state-of-the-art navigation and autonomy solutions** deployed worldwide.

- Be part of a **small, innovative team** where your contributions directly shape product capabilities.

- Engage with customers and partners across **aerospace, defense, robotics, and marine industries**.

- Competitive compensation, benefits, and opportunities for leadership and growth.

Ready to Join the Team?

If you're a GNC engineer who thrives on innovation and collaboration, we'd love to hear from you. To apply, please send your resume and a brief introduction to info@inertialsense.com. We look forward to exploring how you can help us navigate the future of inertial systems!