



Hemisphere GNSS

Senior GNSS Algorithm Engineer

To apply: HR@hgns.com

Responsible for helping lead the research into, delivery, commercialization, and support of multi-frequency/multi-constellation Global Navigation Satellite System (GNSS)-based precision navigation and positioning technologies and products, including machine guidance and control systems, which may be utilized in a variety of applications including agriculture, forestry, earthworks, marine and surveying. In particular, will:

- Lead, conduct, and deliver commercially-viable geospatial applied research to drive the discovery, development, refinement, improvement, and commercialization of new and the improvement of existing Real-Time-Kinematic (RTK), Network Real-Time-Kinematic (NRTK), Precision Point Positioning (PPP), Precision Point Positioning with Ambiguity Resolution (PPP-AR), Kalman filter, and compressional algorithms as well as other and other ionosphere-free solutions that improve transceiver signal reception, processing, ambiguity resolution, carrier cycle-slip detection, and tracking of satellite-based augmentation systems (SBAS) for multi-frequency/multi-constellation GNSS-based (including GPS, GLONASS, BeiDou (COMPASS), Galileo) precision positioning and navigation capable of sub-centimeter level positioning accuracy.
- Develop mathematical models, test processes, and test procedures for evaluating and quantifying new solutions and product performance in accordance with accepted statistical metrics.
- Troubleshoot and determine cause of performance and functionality issues.
- Identify weaknesses and find bugs in current Hemisphere GNSS algorithms and precision positioning source codes, and navigation source codes that are embedded in Hemisphere GNSS precision navigation devices.
- Research, develop, and implement new algorithms into the current Hemisphere GNSS software that can resolve carrier-phase ambiguities reliably to drive product capability development towards sub-centimeter level positioning accuracy in high kinematic, high multipath or weak signal locations.
- Assist field-testing of Hemisphere GNSS precision positioning and navigation software that incorporates new or improved algorithms and other solutions that are embedded in Hemisphere GNSS precision navigation devices.
- Manage development of test procedures, test GNSS software tools, test fixtures, and training materials.
- Resolve the technical issues in the Hemisphere GNSS network-based PPP software to provide reliable satellite corrections including orbits, clocks, and code/phase biases.
- Work with the Company's Advanced GNSS Algorithms Group and exchange ideas to deliver state-of-art RTK and PPP algorithms and software.
- Participate in product planning by providing experienced-based input to next generation product design.
- Liaise with internal cross-functional groups as well as OEM customers to help drive product development from initial concept design stage through to final product release as well as to resolve post-release operational concerns.
- Contribute to the Company's intellectual property portfolio with creative new ideas and patent applications.
- Keep apprised of technical developments and direct research into new resources, products, processes, or methods within the field of GNSS-based precision positioning and navigation.



Required:

Master's degree in Geomatics Engineering, Geospatial Engineering, Geographical Information Systems, or Geospatial Science.

Two years research experience investigating GNSS systems and applications, including investigating limitations, methods, general theory, and mathematical concept to improve the accuracy of Precision Point Positioning (PPP) algorithms, Real-Time Kinematic (RTK) algorithms, or other ionosphere-free solutions that may improve transceiver signal reception, processing, reliable ambiguity resolution and validation methods, cycle-slip detection, or tracking of satellite-based augmentation systems (SBAS) for multi-frequency/multi-constellation GNSS-based precision positioning or navigation. Experience must also include work on development of GNSS precision positioning or navigation software written in MATLAB and C to incorporate PPP, PPP-AR, or RTK algorithms.