Optech

Optech International, Inc.
7225 Stennis Airport Drive • Suite 400 • Kiln, Mississippi 39556 • USA
Tel: [228] 252-1004 • Fax: [228] 252-1007 • www.optechint.com

JOB POSTING- OPTECH INTERNATIONAL
Software Programmer

Role:

The employee is a member of a small research and development team focused on the evolution of Optech's topographic/bathymetric LIDAR technology. This team develops algorithms and software leading to new data products. As part of this team, the employee participates in the development of graphical user interfaces using IDL. Present work is funded under the *Coastal Zone Mapping and Imaging LIDAR (CZMIL)* project sponsored by the U.S. Army Corps of Engineers (USACE) and the *Countermine Lidar UAV-based System (CLUBS)* project sponsored by Office of Naval Research (ONR). The job requires significant interaction with co-workers at Optech International, engineers and software developers at Optech Incorporated in Toronto, Optech's government and industry clients, and Optech's strategic partners.

Duties and Responsibilities:

- Participate in designing and developing graphical user interface to connect existing IDL programs and C++ programs for lidar, hyperspectral, and digital camera data.
- Participate in developing IDL programs to manage memory size and enhance processing speed for large size of data volume from lidar and spectrometer.
- Participate in developing data fusion algorithms to combine lidar and hyperspectral data for characterization of ground objects, coastal environment, the seafloor, and water column.
- Interact with Optech's customer base, strategic partners, and potential clients regarding sensor and data fusion issues.
- Prepare project reports and technical papers, and occasionally present papers at professional conferences.
- Establish and maintain a high degree of familiarity with data produced by Optech's SHOALS and ALTM LIDAR.

Education and Experience:

- Experience of 5-7 years in IDL programming and the ENVI Image Processing.
- Familiarity with graphical user interface designing and developing.
- Familiarity with C++, Java, or Matlab.
- Graduate University Degree in Remote Sensing, Photogrammetry, Civil Engineering, Geography, Physics, Electrical Engineering, Computer Science, Image Understanding, or Information Theory.

Other:

The individual selected for this job should be self-motivated, organized, and capable of meeting project deadlines, and must be comfortable working in a highly diverse and multi-cultural environment. This job may require significant domestic and international travel. Please send resumes to: michelles@optechint.com

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JOB POSTING- OPTECH INTERNATIONAL
Research Engineer, Optech International

Role:

The employee is a member of a small research and development team focused on the evolution of Optech's topographic/bathymetric LIDAR technology. This team develops algorithms and software leading to new data products. As part of this team, the employee participates in the development of data fusion algorithms to combine LIDAR data with passive data to achieve feature extraction, analysis, and classification of coastal land-cover and seafloor. Present work is funded under the *Coastal Zone Mapping and Imaging LIDAR (CZMIL)* project sponsored by the U.S. Army Corps of Engineers (USACE) and the *Countermine Lidar UAV-based System (CLUBS)* project sponsored by Office of Naval Research (ONR). The job requires significant interaction with co-workers at Optech International, engineers and software developers at Optech Incorporated in Toronto, government and industry clients, and strategic partners.

Duties and Responsibilities:

- Participate in developing land-cover/seafloor classification methods based on artificial intelligence.
- Participate in developing data fusion algorithms to combine lidar and hyperspectral data for characterization of ground objects, coastal environment, the seafloor, and water column.
- Participate in data collection and processing activities which support the fusion work including the acquisition and processing of data from hand-held spectrometers, airborne spectrometers, and SHOALS.
- Interact with Optech's customer base, strategic partners, and potential clients regarding sensor and data fusion issues
- Prepare project reports and technical papers, and occasionally present papers at professional conferences.
- Establish and maintain a high degree of familiarity with data produced by Optech's SHOALS and ALTM LIDAR.

Education and Experience:

- Familiarity with A.I. concepts and researches for objects classification from multiple sensors.
- Familiarity with image understanding techniques such as segmentation, feature extraction, and classification.
- Familiarity with the contemporary sensor and data fusion literature as applied to precision imaging and mapping applications.
- Familiarity with IDL, C++, Java, or Matlab.
- Graduate University Degree in Remote Sensing, Photogrammetry, Civil Engineering, Geography, Physics, Electrical Engineering, Computer Science, Image Understanding, or Information Theory.

Other:
Individual selected for the position must be legally eligible to work in the USA as determined by the Department of Homeland Security Bureau of Citizenship and Immigration Services (BCIS) and be prepared to provide the Company with valid acceptable and relevant USA immigration documentation, such as a Proof of US Citizenship, Lawful Permanent Residence (LPR) card, Employment Authorization Document (EAD) card or Visa documents in passport and I-94 card.

The individual selected for this job should be self-motivated, organized, and capable of meeting project deadlines, and must be comfortable working in a highly diverse and multi-cultural environment. This job may require significant domestic and international travel.

Interested applicants are invited to send their resumes with cover letter to: michelles@optechint.com

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JOB POSTING- Optech International

Mechanical/Optical Designer

Role: *The employee is a member of a small research and development team focused on the evolution of Optech's bathymetric LIDAR technology. The team is developing the capability to achieve 3D shallow-water seafloor imaging, characterization of the water column, and classification of benthic habitat and coastal landcover. The employee would apply mechanical design knowledge to Electro-Optical products development; Control documentation and configuration in accordance with established industry standards; and participate in proto-type design as well as transferring products to manufacturing.*

Duties and Responsibilities:

Under the direction of Optech's Systems Development manager, accomplish all necessary engineering activities to:

- Develop and design mechanical elements from the component to systems to packaging in a high paced R&D environment; Prototyping to Manufacturing;
- Experience in the design of optical instrumentation a significant advantage;
- Experience in ray-tracing analysis (ZEMAX), an advantage.
- Translate knowledge of mechanical concepts to layout in order to provide the highest quality documents for long term reliability and performance;
- 3D CAD modeling of components, assemblies and systems. including production level drawings.
- Provide user-friendly documentation packages for R&D, manufacturing;
- Documentation control and maintenance;
- Support existing designs;
- Ensure the design follows industry standards and meet the product specifications;

Qualifications:

- University degree in Mechanical Engineering, Optical Engineering or equivalent
- 2-3 years in design field (optical instrumentation – an advantage)
- Experience with CAD modeling and generation of machine-shop level drawings a must. SolidWorks preferred
- Familiarity with PDM system

Other: The individual selected for this job should be self-motivated, organized, and capable of meeting project deadlines, and must be comfortable working in a highly diverse and multi-cultural environment. This job may require domestic and international travel.

This job is in Kiln, Mississippi and requires permanent residency and work authorization in the US. Please send resumes to: michelles@optechint.com

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JOB POSTING- Optech International

Embedded Systems Engineer - Optech International - USA Role: *The employee is a member of a small research and development team focused on the evolution of Optech's bathymetric lidar technology. The team is developing the capability to achieve 3D shallow-water seafloor imaging, characterization of the water column, and classification of benthic habitat and coastal land cover. As part of this team, the employee participates in designing and building a new generation of bathymetric lidar systems.*

Minimum Qualifications: The candidate should posses the following skills to be considered a viable applicant for this position:

- Education and/or experience in electronic or embedded systems design
- C/C++ Programming skills
- Proficient with Microsoft Office tools

Desired Skills: A desirable candidate would demonstrate one or more of the following capabilities:

- Development of custom client/server architectures utilizing TCP/IP and UDP protocols.
- Integration of new modules or components into embedded systems.
- Interface design and configuration of amplifiers, drivers and digitizers. Develop protocols for storage of acquisition data to memory. Develop data recording, structures and software.
- Knowledge of analog to digital signaling and digital signal processing techniques.
- Embedded master micro-controller/computer for syncing all synchronous elements in an embedded system, strong preference to electro-optic systems.
- Develop code in "C/C++" and/or other languages such as Tcl/Tk , Perl, Java, etc.
- Knowledge of software data structures and/or object oriented programming concepts.
- Proficiency with the use and maintenance of revision control systems such as CVS or subversion.
- Generation of user-friendly documentation packages for R&D, manufacturing;
- Hands on experience in electronic and embedded system prototyping and assembly.
- Printed circuit board design and/or FPGA design/programming.
- The ability to understand and comply with industry standards and meet product specifications.
- Ability to use the Linux operating system. Linux system administration also desirable.

Education:

- Bachelor's degree in software, computer, or electrical engineering or computer science

Desired Work Experience:

- Experience in electronic or embedded system design, implementation, testing, deployment
- Experience in embedded software/driver design preferably in a Linux environment.

Other: The individual selected for this job should be self-motivated, organized, and capable of meeting project deadlines, and must be comfortable working in a highly diverse and multi-cultural environment. This job may require domestic and international travel. This job is in Kiln, Mississippi and requires permanent residency and work authorization in the US. Please send resumes to: michelles@optechint.com