



Zoomlion Heavy Industry N.A., Inc.

Sr. Control Software Engineer

Department: Engineering

FLSA Status: Exempt

Grade/Level:

Job Type: Regular

Work Schedule:

Weekdays Monday through Friday unless traveling.

Hours flexible to meet project needs.

Job Status: Full Time

Reports To: Sr. Engineering Lead, Control Systems

Amount of Travel Required: up to 25%

Positions Supervised: None

POSITION SUMMARY

Research, design, develop, and test Embedded Systems Software and Application software for distributed real-time systems of off-highway heavy equipment. Set operational specifications and formulate and analyze software requirements. Apply principles and techniques of Software Engineering, Real-time System Design Practices and Mechatronics.

ESSENTIAL FUNCTIONS

Reasonable Accommodations Statement

To accomplish this job successfully, an individual must be able to perform, with or without reasonable accommodation, each essential function satisfactorily. Reasonable accommodations may be made to help enable qualified individuals with disabilities to perform the essential functions.

Essential Functions Statement(s)

- Requirement gathering and analysis to develop software solutions by studying system and subsystem needs
- Determines operational feasibility by evaluating analysis, problem definition, requirements, solution development, and proposed solutions.
- Documents and demonstrates solutions by developing documentation, flowcharts, layouts, diagrams, charts, code comments and clear code.
- Operate software development tools, lab equipment or other equipment to perform engineering tasks.
- Use microcontrollers to develop control signals, implement control algorithms, or measure process variables, such as temperatures, pressures, or positions.
- Ensure conformance to design and equipment specifications and compliance with operational and safety standards.
- Recommend, plan, and lead software development improvement initiatives.
- Participates in Software DFMEA activities for major product development initiatives.
- Participates in and/or Leads major product issue resolution initiatives including formal Root Cause Analysis (RCA) on software product failures as required.
- Obtains and licenses software by obtaining required information from vendors; recommending purchases; testing and approving products.

- Responsible for continual improvement and monitoring of all Software Design and Development processes and procedures.
- Ensures implementation and utilization of state-of-the-art analytical tools and techniques in the area of software development and reliability.
- Develop or direct software system testing or validation procedures.
- Prepare reports or correspondence concerning project specifications, activities, or status.
- Updates job knowledge by studying state-of-the-art development tools, programming techniques, and computing equipment; participating in educational opportunities; reading professional publications; maintaining personal networks; participating in professional organizations.
- Develop and maintain knowledge base and standards related to software development, quality, and reliability.

POSITION QUALIFICATIONS

Competency Statement(s)

- Accountability - Ability to accept responsibility and account for his/her actions.
- Communication, Oral - Ability to communicate effectively with others using the spoken word.
- Communication, Written - Ability to communicate in writing clearly and concisely.
- Creative - Ability to think in such a way as to produce a new concept or idea.
- Technical Aptitude - Ability to comprehend complex technical topics and specialized information.
- Initiative - Ability to make decisions or take actions to solve a problem or reach a goal.
- Detail Oriented - Ability to pay attention to the minute details of a project or task.
- Analytical Skills - Ability to use thinking and reasoning to solve a problem.
- Change Management - Ability to encourage others to seek opportunities for different and innovative approaches to addressing problems and opportunities.
- Judgment - The ability to formulate a sound decision using the available information.
- Conceptual Thinking - Ability to think in terms of abstract ideas.
- Decision Making - Ability to make critical decisions while following company procedures.
- Systems Analysis - Ability to determine how a system should work and how changes in conditions, operations, and the environment will affect outcomes.
- Problem Solving - Ability to find a solution for or to deal proactively with work-related problems.

SKILLS & ABILITIES

Education: BS(4 year) and/or MS in Electrical Electronics engineering or Computer Engineering or mechatronics or embedded systems or equivalent

Experience:

- 5+ years of experience in machine control software design and development for heavy equipment (off-highway) required
- Experience with Cranes, Work Lifts and Platforms, Material Handling Machines, Excavators, Tractors, Combines control software is highly preferred
- Experience in developing software for machine or vehicle controls and machine/vehicle automation

- Good knowledge and experience with/of bare metal programming, VxWorks, QNX or other RTOS platforms is a plus.
- Good knowledge and working experience with Embedded Linux or with other embedded operating systems.
- Experience with GUI Development (UI/UX) for mobile machinery is plus.
- Working experience with C, C++ programming languages is a plus.
- Experience in modeling and simulation of software and systems is plus.
- Knowledge of wireless and wired communication (BLE, GPS, Wi-Fi, Ethernet, cellular, CAN) technologies/protocols/applications is a plus.
- Experience in requirement engineering and management is required.

Computer Skills:

Linux OS, MS Windows, Microsoft Office Suite which includes Outlook, Word, Excel, etc. required.

Certifications & Licenses:

Other Requirements:

PHYSICAL DEMANDS

- N (Not Applicable)** Activity is not applicable to this position.
- O (Occasionally)** Position requires this activity up to 33% of the time (0 - 2.5+ hrs/day)
- F (Frequently)** Position requires this activity from 33% - 66% of the time (2.5 - 5.5+ hrs/day)
- C (Constantly)** Position requires this activity more than 66% of the time (5.5+ hrs/day)

Physical Demands

Stand	F	Lift/Carry	
		10 lbs or less	O
Walk	F	11-20 lbs	O
Sit	F	21-50 lbs	N
Manually Manipulate	F	51-100 lbs	N
Reach Outward	O	Over 100 lbs	N
Reach Above Shoulder	O		
Climb	N	Push/Pull	
Crawl	N	12 lbs or less	O
Squat or Kneel	N	13-25 lbs	O
Bend	O	26-40 lbs	N
Grasp	O	41-100 lbs	N
Speak	F		

Other Physical Requirements

WORK ENVIRONMENT

Office environment in a controlled atmosphere building.

Prepared by: Deb Lauenstein Date: 5/10/2017

Approval
Signature: Parag Singhal Date: 5/10/2017

Approval
Signature: Jack Wang, President/General Manager Date: 5/11/2017

The company has reviewed this job description to ensure that essential functions and basic duties have been included. It is intended to provide guidelines for job expectations and the employee's ability to perform the position described. It is not intended to be construed as an exhaustive list of all functions, responsibilities, skills and abilities. Additional functions and requirements may be assigned by supervisors as deemed appropriate. This document does not represent a contract of employment, and the company reserves the right to change this job description and/or assign tasks for the employee to perform, as the company may deem appropriate.