



Zoomlion Heavy Industry N.A., Inc.

Controls Engineer

Department: Engineering

FLSA Status: Exempt

Grade/Level: Junior/entry

Job Type: Regular

Work Schedule:

Weekdays Monday through Friday unless traveling.

Hours flexible to meet project needs.

Job Status: Full Time

Reports To: Eng. Manager - Control Systems

Amount of Travel Required: Up to 10%

Positions Supervised: None

POSITION SUMMARY

Research, define, and develop a variety of software modules for applications used in off-highway, industrial, agricultural, and heavy equipment construction machinery controls. Develop requirements and design specifications, participate in design reviews, evaluate proposed designs by rapid prototyping, modeling, and testing. Apply principles and techniques of software engineering design processes and best practices. Work closely with other engineers and collaborate with other engineering disciplines to successfully complete projects on time and on budget.

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)

- Understand basic software and control system design principals, challenges with hard real-time deadlines, memory limitations, memory types and their use, hardware interfaces, drivers, user interfaces, and real-time operating systems.
- Basic understanding electrical systems, harnessing, wiring, and component selection in a control system or industrial machine.
- Work within a cross-functional design team to evaluate various solutions to problems, participate in developing high-level requirements, then write low-level design requirements and unit tests.
- Communicate development progress, challenges, and roadblocks with the design team and leaders.
- Develop unit test cases to valid software.
- Cascade unit tests into system tests for product acceptance testing.
- Create and maintain as a team software that is of high quality, modular, reusable, and well documented.
- Follow accepted best practices and use tools provided for documentation and source code archival.
- Estimate effort required to complete assigned tasks to assist with project planning.
- Contribute to development process improvements through continual improvement.

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
- Problem Solving - Ability to find a solution for or to deal proactively with work-related problems
- 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
- Judgment - The ability to formulate a sound decision using the available information
- Conceptual Thinking - Ability to think in terms of abstract ideas
- Research Skills - Ability to conduct a systematic, objective, and critical investigation
- Decision Making - Ability to make critical decisions while following company procedures
- Organized – Managing time effectively and following a systematic method of performing a variety of tasks
- Self-Motivated - Ability to be internally inspired to perform a task to the best of one's ability using his/her own drive or initiative
- Systems Analysis - Ability to determine how a system should work and how changes in conditions, operations, and the environment will affect outcomes
- Technical Aptitude - Ability to comprehend complex technical topics and specialized information

SKILLS & ABILITIES

Education: Bachelor's degree (four-year university or tech school)
Required field of study: Electrical, Computer Engineering, or related

Experience: Entry level or early career
Under the supervision of engineering managers and senior engineers:

- Develop control system software designs
- Develop C, C++, CODESYS software modules for control systems
- Understands object-oriented design principles to develop reusable software
- Use Python or other scripting languages to automate processes
- Basic knowledgeable of Matlab/Simulink
- Able to use lab equipment in the execution of tests

Computer Skills: Microsoft Office 360:

- Outlook, Word, Excel, PowerPoint, Visio, and SharePoint

Able to use various software tools used for defining, building, testing, and archiving software and embedded firmware

Certifications & Licenses: None required.

Other Requirements:

- Familiar with various real time operating systems, background foreground, and run to completion strategies
- Good knowledge of all phases of software development life cycle: requirements, design, implementation, reviews, testing, and release
- Familiar with unit, functional, and regression testing
- Exposure to Python and other scripting languages

PHYSICAL DEMANDS

N (Not Applicable)

O (Occasionally)

F (Frequently)

C (Constantly)

Activity is not applicable to this position.

Position requires this activity up to 33% of the time (0 - 2.5+ hrs/day)

Position requires this activity from 33% - 66% of the time (2.5 - 5.5+ hrs/day)

Position requires this activity more than 66% of the time (5.5+ hrs/day)

Physical Demands

		Lift/Carry	
Stand	F	10 lbs or less	O
Walk	F	11-20 lbs	O
Sit	F	21-50 lbs	O
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.