Control Systems Engineer

We know that air pollution is cutting short people's lives and causing health problems, that greenhouse gas emissions are warming the planet and drastically changing our ecosystems, and we know that the emissions from the world's maritime fleet is a major contributing factor in all of this. We also know how to solve this problem. Our mission is to enable marine operators of all kinds to enjoy the benefits of zero emission hydrogen fuel cell technology. We are building the first commercial hydrogen fuel cell ferry in the world and that is just the beginning. Let's get this done together.

Role

The most advanced marine powertrain in the world doesn't run itself… oh wait, yes it does! We need you to make that happen. As our control systems engineer you build the brain of the system – what controls the power flow, achieves high efficiency and lifetime, and makes it safer than anything on the water. This is a design and build position and you should be comfortable behind a desk and in the shop building prototypes.

Responsibilities

- Lead the detailed hardware and software design our automated control system, including defining architecture requirements, developing detailed software design specifications, programming PLC and Industrial PC applications, tuning control loops, system integration and validation to assure quality
- Create electrical designs, schematics, flow charts, I/O maps, harnessing drawings, Bills of Materials, and termination sheets for low voltage control systems as well as high voltage (up to 1,000 VDC/VAC) power flow.
- Test and verify components and software strategy operation on benches, in test cells, and on vessels.
- Develop functional requirements and specifications for system hardware (instrumentation, controllers, power conditioning devices, etc.) and evaluate components from various suppliers.
- Support product development and prototyping efforts with design and hands-on work.
- Assist in preparing Design Verification Test Plans, Periodic Safety Test Plans, Failure Mode and Effect Analyses/Qualitative Failure Analysis for US Coast Guard and/or Class submittals
- Work with our Marketing, Product, and Sales staff to develop market- and customer-specific solutions.
- Communicate easily with customers, strategic partners, and other stakeholders regarding the details of GGZEM's core hydrogen technologies.
- Light travel may be required.

Job Qualifications

Minimum qualifications:

- Bachelors or Master's Degree in Chemical Engineering, Electrical Engineering, Mechanical Engineering, Computer Science, Marine Engineering, or related Engineering fields
- Demonstrated experience with instrumentation and control systems.

- Demonstrated experience in software and hardware development of controls and data acquisition systems.
- Understanding of several programming languages and control device networks and protocols for PLCs, PCs, or DCS systems and networking protocols in order to select the best solution
- Experience with PLC and real-time programming using ladder logic and/or structured text.
- Experience in Electrical CAD packages such as Mentor, E3 or AutoCAD Electrical or other electrical schematic software packages
- Experience with various PLC platforms and HMI packages
- Experience with HIL Simulation
- Experience preparing clear written summaries and giving presentations
- Proactive, innovative, and flexible mindset
- Comfortable working as a key contributor in a small startup team
- Open minded to occasionally work outside your specified role to help the company do what it needs to do to meet deadlines and scale quickly
- Experience with and enthusiasm for with tinkering, making, hacking, hands-on hobbies and projects, etc.
- Legal authorization to work in the United States

Preferred qualifications:

- Multidisciplinary abilities as evidenced by additional major/minor degrees, job training, and/or experience in one or more of the following:
    - Electrical engineering: high voltage (up to 1,000 V) AC and DC, power conversion and regulation equipment, batteries and capacitors, motors, etc.
    - Mechanical engineering: fluid and heat transfer system design, air handling, energy systems, etc.
- Knowledge of C or C++, Python, VB, MATLAB/Simulink, MathCad, etc.
- Familiarity with or interest in machine learning and data analytics

Perks

GGZEM provides:

- Full benefits package
- Equity ownership in a high-growth company
- Competitive salary with bonus structure
- Flexible work hours and environment
- Training and growth opportunities
- Minimal bureaucracy
- Empowerment to do your job
- Fun, challenging work with a purpose