



## Software Engineer Energy Innovations San Diego, California

### **The Company:**

Energy Innovations, based in San Diego, CA has pioneered the development of Highly Concentrated Photovoltaic (HCPV) systems that use concentration to substantially reduce the cost of solar energy. EI's mission is to leverage the benefits of concentrated solar to achieve economic parity with fossil fuel generated power alternatives, making EI the first choice for alternative energy.

EI's breakthrough Sunflower system uses Fresnel lenses to concentrate the sun 1,200:1 onto ultra high efficiency PV cells adapted from the satellite industry. Our module operates at twice the efficiency of traditional crystalline silicon PV panels and when coupled with our revolutionary low cost 2-axis tracker, generates 30% more energy than current generation PV panels.

EI is seeking a Software Engineer to participate in the development of our tracking control, wireless communications and status monitoring systems.

Energy Innovations is an operating company of Idealab, a prolific creator and operator of technology businesses. More information can be found at:

[www.EnergyInnovations.com](http://www.EnergyInnovations.com)

[www.Idealab.com](http://www.Idealab.com)

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### **Position Purpose:**

The successful candidate will design, implement, test and maintain key elements of our system software as listed below.

1. Sun-tracking and power optimization algorithms
2. Closed loop sun tracking software
3. Open loop sun tracking software
4. Microcontroller-based motor control
5. Server-based array status monitoring and control software
6. The various data analysis tools
7. Wireless data communications protocols

### **Required Skills:**

- Control systems expertise
- Feedback control algorithms
- Extremely comfortable with development in a Unix-like environment using GNU tools.
- Broad experience developing software for microcontroller-based embedded devices. This includes both the implementation of the higher level logic, and the lower-level interaction with the surrounding circuitry.
- Electrical engineering expertise desirable to aid in debugging (should know how to use an oscilloscope).
- Very comfortable writing C, C++ and Perl.
- Designing and implementing large-scale feedback-control systems.
- Knowledge of structured design principles
- Requirements documents creation
- Revision control management
- Regression testing

### **Preferred skills & Qualities:**

- Experience designing and/or implementing wireless network protocols.
- Comfortable working with mathematical algorithms, specifically ones utilizing linear algebra and nonlinear optimization.
- Some experience developing user interfaces.
- BS in electrical, computer or control engineering.
- Comfortable with independent ownership of a project.
- Ability to multitask with multiple projects in a fast-paced environment.
- Willingness to take responsibility for the accuracy and repeatability of data.
- Excellent oral and written communication skills.