



### Position: **Senior Computer Vision Software Engineer**

Do you want to make a meaningful and lasting impact on the world? Do you want to come to work knowing that your contribution can change millions of lives? Join us in the mission to diminish the disease and destruction caused by harmful insects to protect the world's population and food supply!

Photonic Sentry is building a revolutionary insect control device - the Photonic Fence, designed to track targets in flight, identify whether they are harmful or benign and disable the harmful ones by shooting them down with lasers. Initially conceived to help reduce malaria transmission, the technology can be applied in the fight against other diseases, including zika, dengue, chikungunya, leishmaniasis, and many more. Beyond the vector control applications, the Photonic Fence has the potential to transform the way we protect people, crops, and livestock across a wide range of use cases, spanning commercial, agricultural, government, military and residential.

- Develop and deploy a revolutionary new device using lasers to control insect-borne diseases
- Become a core member of a small, dedicated team in a fast-moving startup environment
- Join now and immediately impact product design decisions for the first generation of the technology that will be deployed to customers

Members of Photonic Sentry's technical staff are skilled in software, optics and laser physics, mechanical and electrical engineering. We are looking to hire a Senior Computer Vision Software Engineer to join our technical team. The successful candidate will be able to work both independently and as part of a small, focused, dedicated team in a collaborative environment of engineers, scientists, and technicians. The Senior Software Engineer will be largely self-directed, manage the design, performance requirements, manufacturing, assembly, budgets, schedules, communicate progresses, and review the work of peers. The successful candidate will demonstrate the ability to think creatively and to operate within a flexible, fast-paced development program dedicated to converting advanced research into real-world functional products.

#### **Responsibilities**

- Design, prototype, implement, and performance-optimize mathematical models, algorithms, software, and associated compute platform for a computer vision system used in tracking, identifying, and killing airborne insects
- Architect processes and design how they interface
- Devise data storage architecture and data synchronization
- Lead and manage engineering projects from feasibility stage to commercialization

- Translate numerical and combinatorial algorithms prototyped in a high-level language to efficient implementation
- Participate in overall system architecture and design, in cooperation with electrical, mechanical, and optical engineers
- Develop and maintain project risk management and prioritized project deliverables structures, with a view toward on-time and on-budget delivery
- Work with cross-functional technology development teams to define the criteria for moving the project from prototype into product development
- Clearly communicate/present product development updates to internal and external team members, Photonic Sentry executives and other stakeholders
- Design and execute field demonstration programs, traveling as needed to test sites and partner locations to assess efficacy and gather feedback
- This role has no direct reports currently, but candidate must be comfortable leading project teams

### **Qualifications**

- An indelible desire to change the world for the better
- BS in computer science, mathematics or equivalent; MS or PhD preferred
- 10+ years of experience in C or C++ software development as a Computer Vision Engineer, Software Architect, Principal Software Engineer, Computer Scientist, Software Engineer, Research Software Engineer, Embedded Software Engineer or related title
- Practical experience with digital signal processing (DSP) techniques such as digital filtering and frequency estimation
- Machine vision and GPU computing experience in a constraint programming environment
- Experience with parallel computing platforms such as CUDA
- Basic knowledge of computer vision, or at a minimum, rudimentary facility with linear algebra
- Proficiency designing in a Real Time OS (RTOS) such as VxWorks, FreeRTOS, PSOS or related; Linux kernel experience a plus
- Facility with writing drivers for custom hardware is preferred
- Experience using version control systems and defect tracking software
- Real world product development experience, including having shipped products
- Some project management experience, including managing requirements, budgets, and schedules
- Proficiency with control systems and debugging system performance is required
- Experience working in the developing world a plus

We are an equal opportunity employer.

### **About Us:**

The Photonic Fence technology was originally developed at Intellectual Ventures Lab, with support from the Bill & Melinda Gates-backed Global Good Fund. Photonic Sentry was established in 2016, charged with designing, analyzing, prototyping, productizing and field testing this new and groundbreaking device to solve global health and global development challenges. You can learn more about Photonic Sentry and the Photonic Fence at [www.photonicsentry.com](http://www.photonicsentry.com).