

**LIGHT FIELD LAB, INC.  
JOB DESCRIPTION**

**POSITION:** Computational Imaging Architect

**DEPARTMENT:** Engineering

**FT or PT:** Full Time

**STATUS:** Exempt

**REPORTS TO:** CTO

**POSITION OVERVIEW:**

This is the Computational Imaging Architect for rendering video for the world's highest resolution holographic display ecosystem. You will architect light field imaging algorithms for visualizing and interacting with light fields, and develop interfaces for sharing light field data across multiple platforms. You will work on optimizing 3D image quality and trading off bandwidth requirements. Some of your work will be with standards committees such as MPEG to develop light field compression approaches.

**JOB DUTIES:**

**Essential Duties and Responsibilities**

- Architect the rendering of holographic images, and develop algorithms for holographic projection
- Develop visual perception quality metrics to optimize perceived light field resolution
- Work with developers in Nuke, Unity, Unreal, and other applications to develop interfaces for sharing data across different platforms, and adapting to different data formats
- Develop compression encoding and decoding algorithms to compress light field data
- Develop calibration techniques to capture and process data for the purpose of optimizing light field display
- Work with the standards committees such as MPEG
- Assist in writing visual effects plugins for interacting with light field data
- Other tasks as assigned.

**Other Duties and Responsibilities**

- Work with the Systems Architect to help optimize display design

## **REQUIREMENTS AND QUALIFICATIONS:**

### **Qualifications**

- Advanced degree or commensurate experience in Computer Science or Computer Vision with a background in image processing and computational imaging
- Proven track record in delivering professional imaging solutions
- Experience with computational imaging, light field physics, and ray tracing
- Strong C++ coder – at least 5 years of experience with object-oriented architecture, comfortable with multi-threaded development.
- Experience with Python and Matlab
- Able to implement video compression algorithms
- Able to construct an image processing pipeline, and experience with image quality analysis
- Familiar with rendering of 3D data and volumetric video, camera tracking, relighting, and texture mapping
- Comfortable in a fast-paced startup environment
- Industry recognition via publication is a plus
- Experience with writing GPU shaders is a plus
- Expertise with writing software plugins for Nuke, Unreal, Maya, or other content creation applications is a plus
- Knowledge of compositing workflows, and experience with developing software for post-production environments is a plus

### **Key Competencies**

- Light field architecture
- Computer Vision algorithms
- Image Processing
- Advanced C++ coder
- GPU shaders
- Video compression
- Light field calibration

## **PHYSICAL REQUIREMENTS**

The physical demands described here are representative of those that must be met by an employee to successfully perform the essential functions of this job. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions.

- Ability to lift and carry 25 pounds for 50 feet; bend and reach; work in an environment with daily changes in climate;
- While performing the duties of this job, the employee routinely is required to sit, read, write, type and speak for extended periods of time;
- The employee is required to move around the premises;
- The employee must be able to observe and respond to people and situations and interact with others encountered in the course of work;
- Employee must be able to learn and apply new skills or information;
- Must be able to multi-task regularly;
- Employee must display a positive, professional image and attitude and work well with others;
- The environment generally is moderate in temperature and noise levels;
- The position also requires the following abilities:
  - Ability to look at computer screen for extended periods;
  - Ability to concentrate and focus for extended periods;
  - Ability to handle stress;
  - Ability to interact frequently and positively with others;
  - Ability to meet deadlines

The above information on this description has been designed to indicate the general nature and level of work performance by employees within this classification. It is not designed to contain or interpreted as a comprehensive inventory or exhaustive list of all duties, responsibilities and qualifications required of employees assigned to this job. Management reserves the right to amend and change responsibilities to meet business and organizational needs. Light Field Lab Inc., is an at-will employer and this description is not intended to imply a guarantee of permanent employment.