LIGHT FIELD LAB ™

LIGHT FIELD LAB, INC.
JOB DESCRIPTION
(1/24/18)

POSITION: **Systems Architect**

DEPARTMENT: **Engineering**

FT or PT: **Full Time**

STATUS: **Exempt**

REPORTS TO: **CTO**

POSITION OVERVIEW:

This is for the role of Systems Architect for the world's highest resolution holographic display ecosystem. The ideal candidate will have years of experience architecting distributed systems, and have knowledge of the software and hardware blocks required for computing, network, and storage requirements. This candidate will be familiar with FPGA development, embedded systems, and will have a background in imaging or display systems. The candidate will be setting the standard for Light Field Lab's system design, and will be working daily with a team of software developers, EEs, mechanical engineers, optical engineers, and experts in light field imaging.

JOB DUTIES:

Essential Duties and Responsibilities

- Generate a system-level architecture for a distributed display system which includes multiple GPUs, video drivers, and custom FPGAs
- Work with GPU drivers to support gigapixel resolution
- Determine architecture for sending video signals from a CPU host to a target device using PCIE protocols
- Work to integrate system software into 3rd party API's, i.e. gaming engines
- Architect a custom FPGA that performs data processing of large data sets
- Generate system-level block diagrams that show the details of how custom FPGAs interface to hardware video display drivers
- Implement decoding for proprietary codecs in processors and FPGAs
- Other tasks as assigned

Other Duties and Responsibilities

- Work with EE's, ME's, optical engineers, and light field imaging experts to achieve an optimal system design
- Evaluate new platforms, and work with vendors from all fields

REQUIREMENTS AND QUALIFICATIONS:

Qualifications

- Experience with large-scale distributed systems, networking, and software infrastructure
- At least 5 years of experience in taking a lead role in the design for both system software and embedded software realized in C and C++
- Able to specify detailed block diagrams for the interconnection between CPU's, PCIE devices, FPGA's, memory devices, and third-party FPGA hardware video drivers
- Experience writing drivers in Linux for control of video devices, memory, or other hardware devices
- Experience programming an FPGA to communicate with a host PCIE bus is a plus.
- Proven experience in working with electrical engineers to bring up the FW for a complex system
- Experience with architecture of imaging systems and display systems is a plus.
- Familiarity with working with HDMI or Display Port video signals, and familiar with video encoding and decoding protocols
- Familiar with use of hardware IP blocks in an embedded system
- Comfortable in a fast-paced startup environment
- Able to implement video drivers for a high-resolution gigapixel display, and familiar with video synchronization across multiple GPU's running on multiple systems
- Familiarity with integration into a 3rd-party gaming engines is desirable
- Understanding of VOIP is desirable

Key Competencies

- High-level system architecture
- System software architecture
- FW development in C and C++
- FPGA development
- Display devices and hardware IP blocks
- Video interface standards such as Display Port and HDMI
- Video codecs
- PCIE communication between a target and a host CPU system
- Video drivers for high-resolution displays

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.

Light Field Lab does not discriminate on the basis of race, color, national origin, age, sex, sexual orientation, gender, gender identity, gender expression, marital status, physical or mental disability, medical condition, genetic information, religion, (including, but not limited to, religious dress and grooming practices), family status, ancestry, citizenship, military and veteran status, filing of a workers' compensation claim, or any other legally protected status. It is our intention that all applicants be given equal opportunity and that selection decisions are based on job related factors. We are an equal opportunity employer."