INTUITIVE

Job Description

Job Title: **Computer Vision / AI Intern**
Department: **Applied Research**
Reports to: **Manager, Applied Research**
Location: **Sunnyvale, CA**

Company Description:
Intuitive Surgical designs and manufactures state-of-the-art robot-assisted systems for use in minimally-invasive surgery. These systems are revolutionizing the way in which surgery is being done and offer a unique platform—that is being used routinely at hospitals worldwide—for exploring the potential of intelligent surgery. Joining Intuitive Surgical means joining a team dedicated to using technology to benefit patients by improving surgical efficacy and decreasing surgical invasiveness, with patient safety as our highest priority.

Eligibility:
Must be concurrently enrolled in a degree-seeking program with an accredited university or enrolled in an upcoming program in the fall.

Primary Function of Position:
We are seeking a self-motivated intern to develop prototype methods to model, detect and recognize the surgical activities occurring within procedure videos. Work will include image/video understanding and surgical activity recognition algorithms based on unique clinical datasets and state-of-the-art deep learning and computer vision methods.

Roles and Responsibilities:
The intern will:

- Develop spatio-temporal action recognition methods based on unique clinical datasets (multi-view RGB-D) and deep learning algorithms.
- Develop new and/or improve previously developed video/image semantic segmentation methods
- Work with an existing vision and ML data pipeline and toolset and improve aspects of it
- Analyze and improve efficiency, accuracy, scalability and stability of currently developed systems

Skill/Job Requirements:

- Graduate-level study in computer science, electrical engineering or robotics with emphasis on computer vision and machine learning.
- Experience building systems based on machine learning and/or deep learning methods.
- Strong hands on C++/Python/Matlab skills.
- Strong hands-on experience with deep learning frameworks such TensorFlow, PyTorch, and Caffe.
- Good hands on experience with a few of the state-of-the-art deep learning models for image/video understanding and pose estimation.
- Good hands on experience with computer vision algorithms and libraries.
- Self-starter and able to work in a collaborative and results oriented environment.

Learning Outcomes:

- Develop, build, and test prototypes in an industrial research environment.
- Gain experience building learning systems based on a very unique clinical dataset (RGB-D and video) and application

- Gain experience with integration of CV/ML algorithms with robotic platforms
- Gain experience with state of the art 3D sensing technologies/systems/algorithms
- Gain hands-on experience with a robot-assisted surgery platform while integrating and testing prototype technologies.
- Gain experience working with data-sets from clinical settings.

Commitment: Must be available to work full-time hours, M-F for 12-14 weeks beginning anytime between January and June 2020. We are an AA/EEO/Veterans/Disabled employer.