

# Automatic safety management and maintenance in state grid based on computer vision

## **PROJECT SUMMARY:**

Safety management and maintenance are essential in state grid operation. However, currently, some related tasks are still conducted manually and personally, which is highly inefficient and could be inaccurate due to human carelessness or negligence. For example, the anchor bolts and their main column may not be concentric, which is currently inspected by manual measurement. Our goal is to make the procedure automatic by utilizing computer vision. For another example, the scaffold is one of the most common structures for a variety of construction. Making sure that the scaffold is built following the safety rules is extremely important for the life safety of workers. Similarly, if the whole safety inspection of the scaffold can be performed automatically, the safety management can be more efficient and accurate. Our goal is to realize three-dimensional reconstruction of the scaffold so that automatic safety inspection can be possible.

## **POSSIBLE DUTIES & RESPONSIBILITIES:**

- Programming; literature survey; hand-on experiments; documentation of research slides and summary.

## **PREFERRED QUALIFICATIONS:**

- JI junior/sophomore students
- Self-motivated with interests in computer vision, image processing, and/or hands-on experiments
- Experience in Matlab or similar software
- Experience in image and signal processing
- Work independently to some extent
- Prior research experience desired, but not required
- Basic knowledge of computer vision is a plus

## **Application:**

All interested applicants are encouraged to contact Dr. Sung-Liang Chen at [sungliang.chen@sjtu.edu.cn](mailto:sungliang.chen@sjtu.edu.cn). Office: Rm. 428, Longbin Bldg.

24<sup>th</sup> IPP project entitled “同组地脚螺栓中心对主柱中心偏移的自动智能检查” can be considered.