Master Internship 2016

Generic Visual Search based on Deep Attention Model

Supervisors

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Presentation of the project

Object detection has played quite important role in building intelligent robot in interacting with people and environment. Recently, important progress for improving the accuracy of object detectors has been made possible with Convolutional Neural Networks (CNNs), which leverage big visual data and deep learning for image categorization. While these techniques focused on still images, determining the exact location of a target object in a scene requires active engagement to understand the context, change the fixation point, identify distinctive parts that support recognition, and determine the correct proportions of the box, as conveyed in sequential video stream.

Expected deliverables

The goal of this project is to develop general and efficient object search method for video stream like movie shot or even challenger RGBD streams shot by Kinect using state-of-the-art attention deep neural networks. The developed methods can be applied to various large scale video understanding tasks such as video object detection, classification, retrieval and description. Besides publication of the conducted research in reputable conferences and journals, the candidate is expected to develop a demonstrable software prototype.

Keywords

Holistic Scene Understanding, Indoor Navigation, Ambient Assisted Living.

Applicant profile

- Master Degree or Engineer Student (last year of studies).
- Knowledge/experience in image processing and computer vision
- Strong motivation towards this challenging project.
- Open to work with both French and Singaporean scientists.
- Availability for 5 to 6 months starting in the first semester of 2016.