Computer Vision Graduate Student at University of California, San Diego receives Google Fellowship

August 3, 2010

Daniel Kane

Congratulations to University of California, San Diego computer science Ph.D. student Boris Babenko, winner of the 2010 Google Fellowship in Computer Vision. The fellowship will enable Babenko to focus on his computer vision research while he completes his dissertation. The award includes tuition and fees, a stipend, an Android phone, and funding towards conferences and a personal computer.

"The travel funding is amazing," said Babenko, who outlined how the Google Fellowship will enable him to attend the European Conference on Computer Vision (ECCV). He is a co-author on an ECCV paper, but not a first author. "Without the fellowship, I might not have been able to go. This makes it much easier."

Babenko's fellowship is one of 15 awarded by Google in North America in 2010. Google awarded one fellowship in each of the following specialty areas: Machine Learning, Statistics, Computer Networking, Web Application Security, Machine Translation, Distributed Systems, Human Computer Interaction, Language Security, Neural Networks, Computer Graphics, Computer Vision, Compiler Technology, Natural Language Processing, Search and Information Retrieval, and Speech.

Computer Vision Babenko's computer vision research focuses on object detection and object recognition. Working on these pattern recognition problems typically requires large amounts of precisely labeled data. "Teaching" a computer system to recognize a person's face, for example, requires that the computer be exposed to many examples of that person's face. Collecting large amounts of training data is time consuming, and for some applications can become prohibitively expensive.

Babenko's research takes a different approach. He works on "weakly supervised learning" systems where labels are less precise and therefore less expensive to obtain. For example, teaching a computer to recognize a particular face using weakly supervised learning might simply require photos of the person - without having to specify exactly where the person's face is in each image. This problem is more challenging due to ambiguity in location, especially when the photos contain multiple people. This approach can be used to tackle a wide range of computer vision problems; Babenko has applied similar ideas to recognizing landmarks, detecting pedestrians, and tracking objects in video clips.

In summer 2009, Babenko interned with the computer vision team at Google's Santa Monica office, where he worked on Google Goggles, a mobile visual search app for Android-powered devices. Google Goggles is available in Google Labs.

This internship "provided hands on engineering experience on a real world project," said Babenko. "Google has amazing development resources." Another UC San Diego computer vision student, Kai Wang, is interning at Google in Santa Monica this summer.

"I am tremendously grateful for the years of fruitful interaction my students and I have had with computer vision researchers at Google," said Serge Belongie, a computer science professor at UC San Diego and Babenko's

Ph.D. advisor. Together with computer science professor David Kriegman, Belongie co-directs the Computer Vision Lab in the Department of Computer Science and Engineering (CSE) at UC San Diego.

"Not only has Google provided me with funding for research projects, they have also provided summer internships for several of my students and hired four of them as permanent employees," said Belongie. "There are few companies that could serve as a better environment than Google for computer vision researchers interested in problems such as large scale object recognition and 3D reconstruction."

From Undergrad to Graduate Student In 2007, Babenko started his Ph.D. in computer science at UC San Diego - where he also earned his computer science B.S./M.S. degrees. It was during the transition from undergraduate to graduate student that he discovered computer vision.

"When I first encountered computer vision, I didn't realize it had such strong links to machine learning and artificial intelligence. It was a neat combination of a lot of things I found interesting," said Babenko, who started his computer science education with a focus on bioinformatics. "I had a really good mentor, but bioinformatics wasn't for me." His advice for undergraduates looking for their niche: "Keep trying. If you try enough things, eventually you find enough things you like. I sat in on math classes, electrical engineering classes. I took the Beatles class at UCSD - that was great."

Media Contacts: dbkane@ucsd.edu, (858)534-3262