



## **MICHAEL LAM**

Oregon State University, College of Engineering, Electrical Engineering and Computer Science

### **Degrees:**

M.S. Computer Science, Oregon State University

B.S. Computer Engineering, University of Washington

B.S. Applied and Computational Mathematical Sciences, University of Washington

### **Advisors:**

Sinisa Todorovic, Ph.D. and Thomas Dietterich, Ph.D.

### **Scholar Award Donors:**

Laurie Meigs and Veronica Macdonald

### **About the Scholar:**

Michael studies computer vision, machine learning and artificial intelligence. He focuses on fine-grained recognition of biological images, and structured prediction. He plans to expand the visual vocabulary for computer vision to give computers a richer understanding of the world, where an animal image could be recognized at the species level as an example. With the proliferation of digital cameras and the rise of “big data,” there are many opportunities for deeper scientific and recreational image and video analyses. Biologists could use this in scoring phenomic characters of species with applications in evolutionary biology and ecology; physicians could use it to more specifically diagnose tumors.

### **Benefits to Society:**

Computer vision is appearing everywhere. With the proliferation of digital cameras and the rise of “big data”, there are many opportunities for deeper scientific and recreational analysis of image and video data. Biologists could use this in scoring phenomic characters of species with applications in evolutionary biology and ecology; physicians could use it to more specifically diagnose tumors. Recreational applications include richer image search; a user could better search a product from a database by providing more specific image attributes rather than just generic keywords.

### **Awards and Honors:**

NSF Graduate Research Fellowship

### **Publications and Posters:**

**Michael Lam**, Janardhan Rao Doppa, Xu Hu, Sinisa Todorovic, Thomas Dietterich, Abigail Reft and Marymegan Daly (2013). *Learning to Detect Basal Tubules of Nematocysts in SEM Images*. IEEE International Conference of Computer Vision Workshop on Computer Vision for Accelerated Bioscience (ICCV CVAB).

Xu Hu, **Michael Lam**, Sinisa Todorovic, Thomas Dietterich, Maureen O'Leary, Andrea Cirranello, Nancy Simmons and Paul Velazco (2013). *Zero-Shot Learning and Detection of Teeth in Images of Bat Skulls*. IEEE International Conference of Computer Vision Workshop on Computer Vision for Accelerated Bioscience (ICCV CVAB).