

Calden Wloka

calden (at) cse (dot) yorku (dot) ca

Research Interests

Computer vision, visual attention, perception and psychophysics, and adaptive control.

Education

PhD in Computer Science York University, John Tsotsos' Lab	2012 - present
Masters of Computer Science York University, John Tsotsos' Lab	2010 - 2012
Honours Bachelor of Science: Self-Designed Specialist Program in Computational Neuroscience, Minor in Mathematics University of Toronto	2007 - 2009
Engineering Science - Aerospace Option University of Toronto, completed third year + Professional Experience Year before transfer to science.	2003 - 2007

Selected Publications

Calden Wloka and John Tsotsos (2016) Spatially Binned ROC: A Comprehensive Saliency Metric. *Proc. of IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*

John Tsotsos, Iulia Kotseruba, and Calden Wloka (2016) A Focus on Selection for Fixation. *Journal of Eye Movement Research*, 9(5):2,1-34

Neil Bruce, Calden Wloka, Nick Frosst, Shafin Rahman, and John Tsotsos (2015) On computational modeling of visual saliency: Examining what's right and what's left. *Vision Research*, 116, 95-112

Calden Wloka (2012) Integrating overt and covert attention using peripheral and central processing streams. *York University, Master's Thesis**

**winner of Joseph Liu Best Thesis Award and York University Thesis Award*

Patents

Co-inventor of *Systems and Methods for Inspection of Stents* - US8134700
Issued 13 Mar. 2012

Co-inventor of *Systems and Methods for the Inspection of Cylinders* - US7812941
Issued 12 Oct. 2010

Awards

- Awarded National Science and Engineering Research Council (NSERC) 3 year post-graduate scholarship, 2013-2016
- York University Thesis Award, Master Level, 2012
- Joseph Liu Best Thesis Award for Computer Science and Engineering, 2012
- Awarded Ontario Graduate Scholarship (OGS) for 2011-2012 Academic Year
- Winner of C.L. Burton Open Scholarship in 2008-2009 Academic Year

Employment

Research Assistant Sunnybrook Health Science Centre, Department of Imaging Research	<ul style="list-style-type: none"> • Worked in Dr. Richard Aviv's radiology research group • Performed image segmentation and analysis on MR and CT images for studies in stroke and MS. • Coordinated the efforts of other research team members and introduce computational automation to speed up data collection. 	Nov. 2009 - April 2010
Ludwig Prandtl Summer Research Fellow Max Planck Institute for Dynamics and Self-Organization	<ul style="list-style-type: none"> • Worked in Dr. Marc Timme's Network Dynamics research group • Performed mathematical analysis on networks of dynamical oscillators • Modified and expanded simulation programs using Mathematica to test theoretical predictions 	June - Aug. 2009
Imaging Systems and Systems Design Intern Automation Tooling Systems	<ul style="list-style-type: none"> • Provided troubleshooting and in-depth analysis of high risk design areas to ensure timely completion of quality custom automation systems. • Performed proof of principle studies to prototype design solutions and identify risks and solution feasibility. • Designed, programmed, and tested custom machine vision systems to provide accurate and reliable performance. 	May 2006 - May 2007

Teaching

Awarded Teaching Assistant Certificate in Teaching (TACT) at York University in 2015
Recent Teaching Assistantships at York University:

EECS4421: Robotics	<ul style="list-style-type: none"> - Course content covers robotic control and integration of robot and camera frames of reference - Responsibilities include leading the practical laboratory, providing code for camera control and basic image processing, and evaluating student projects 	Winter 2014, 2016
Math/EECS1028: Discrete Math for Engineers	<ul style="list-style-type: none"> - Course content covers introductory proofs in discrete mathematics and an introduction to computational principles - Responsibilities include leading weekly tutorials 	Winter 2015-2016
EECS3000: Professional Practice in Computing	<ul style="list-style-type: none"> - Course content covered ethical issues in computer systems (for example: privacy, intellectual property rights, and censorship). - Responsibilities include providing feedback and marks for student essays and meeting with students to discuss academic writing techniques. 	Fall 2011-2013, 2015