

Robin Swanson

- CONTACT INFORMATION *Email:* robin@cs.toronto.edu
Website: <http://www.cs.toronto.edu/~robin>
- EDUCATION **University of Toronto**, Toronto, Canada *Sept 2016 - Present*
PhD, Computer Science
Advised by Dr. Kyros Kutulakos
- King Abdullah University of Science and Technology**, Saudi Arabia *Aug 2014 - Dec 2015*
Masters of Science, Computer Science
Advised by Dr. Wolfgang Heidrich
Masters Thesis: Sparse Representations of Hyperspectral Images
- University of Manitoba**, Winnipeg, Canada *Sept 2008 - May 2014*
Bachelors of Science, Joint Physics & Computer Science (Honours)
Advised by Dr. Jason Fiege
Honours Thesis: Data Modeling of Early Star Formation
- RESEARCH INTERESTS Computer Vision, Computational Photography, Astronomical Imaging and Instrumentation, Machine Learning and Optimization
- PUBLICATIONS **Closed Loop Predictive Control of Adaptive Optics Systems with Convolutional Neural Networks**
Robin Swanson, Masen Lamb, Carlos Correia, Suresh Sivanandam, Kiriakos Kutulakos
Monthly Notices of The Royal Astronomical Society (MNRAS), 2021
- Simultaneous Estimation of Segmented Telescope Phasing Errors and Non-Common Path Aberrations from Adaptive Optics Corrected Images**
Masen Lamb, Carlos Correia, Suresh Sivanandam, Robin Swanson, Polina Zavyalova
Monthly Notices of The Royal Astronomical Society (MNRAS), 2021
- Consensus Convolutional Sparse Coding**
Biswarup Choudhury*, Robin Swanson*, Felix Heide*, Gordon Wetzstein, and Wolfgang Heidrich
International Conference on Computer Vision (ICCV), 2017
- Material Classification Using Raw Time-of-Flight Measurements**
Shuochen Su, Felix Heide, Robin Swanson, Jonathan Klein, Clara Callenberg, Matthias Hullin, and Wolfgang Heidrich
IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2016
- PRESENTATIONS **Wavefront Reconstruction and Prediction with CNNs** *June 2018*
Poster presented at SPIE Astronomical Telescopes + Instrumentation, Austin, Texas
- Sparse and Low Rank Representations of Hyperspectral Images** *March 2016*
Poster presented at Computational Imaging and Visualization Conference, KAUST, Saudi Arabia
- Phase Mixing of Energy Conserving Particle Swarm Optimizers** *Oct 2013*
Talk presented at the Canadian Undergraduate Physics Conference, Hamilton, Canada
- Investigation of Transversals in Rectangles** *Oct 2013*
Poster presented at University of Manitoba Undergraduate Poster Conference, Winnipeg, Canada
- Simulation of DEAP3600 Data Acquisition Noise** *Oct 2012*

Poster presented at Canadian Undergraduate Physics Conference, Vancouver, Canada

RESEARCH EXPERIENCE	Computational Imaging Group , KAUST, Saudi Arabia <i>Student</i> , advised by Dr. Wolfgang Heidrich Masters Thesis: "Sparse Representations of Hyperspectral Images"	<i>Aug 2014 - May 2016</i>
	Vision Lab , University of Manitoba, Canada <i>Summer Intern</i> , advised by Dr. Neil Bruce Topic: "Learning Object Affordances From 3D Models"	<i>May 2014 - Aug 2014</i>
	Computational Combinatorics , University of Manitoba, Canada <i>Research Assistant</i> , advised by Dr. G.H.J. Van Rees Sponsored by <i>University of Manitoba Undergraduate Research Award</i> Topic: "Transversals in Rectangles"	<i>May 2013 - Aug 2013</i>
	TRIUMF , University of British Columbia, Canada <i>Research Assistant</i> , advised by Dr. Fabrice Retiere Topic: "Sensor Noise Analysis of the DEAP-3600 Dark Matter Experiment"	<i>May 2012 - Aug 2012</i>
	Dynamic Spintronics Group , University of Manitoba, Canada <i>Part-Time Research Assistant</i> , advised by Dr. C.M. Hu	<i>Oct 2011 - April 2012</i>
	Computational Geometry Group , University of Manitoba, Canada <i>Summer Intern</i> , advised by Dr. Helen Cameron	<i>May 2010 - Aug 2010</i>
WORK EXPERIENCE	Facebook Reality Labs , Redmond, Washington, USA Research Intern with the Display Systems Research group under Douglas Lanman and Lei Xiao	<i>Sep 2018 - Dec 2018</i>
	Canada-Japan Coop , Taiyo Industries Co., Ltd., Japan Designed and developed computer vision techniques (C++/CUDA) to detect manufacturing errors in flexible printed circuit boards.	<i>May 2011 - May 2012</i>
TEACHING EXPERIENCE	TA , University of Toronto, Canada <i>Data Structures and Analysis (CSC 263)</i> <i>Introduction to Visual Computing (CSC 320)</i>	<i>Sep 2016 - Present</i>
	TA , King Abdullah University of Science and Technology, Saudi Arabia <i>Machine Learning (CS 229)</i>	<i>Jan 2016 - May 2016</i>
AWARDS & HONORS	NSERC Graduate Scholarship	<i>2018 - 2020</i>
	Vector Institute Affiliate Fellowship	<i>2018 - 2020</i>
	Queen Elizabeth II Graduate Scholarship	<i>2017 - 2018</i>