

Yani Ioannou

- CONTACT INFORMATION** 111 Bennett Rd
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- SKILLS SUMMARY**
- Ph.D. in Deep Learning/Computer Vision, under the direction of Prof. Roberto Cipolla (University of Cambridge) and Dr. Antonio Criminisi (Microsoft Research)
 - Published at top conferences in fields of machine learning and computer vision, including NIPS, CVPR, ICLR and 3DV
 - Research experience at a leading industrial research lab (Microsoft Research Cambridge)
 - Open-source development, notably in the Linux kernel and Point Cloud Library (PCL)
- EDUCATION**
- University of Cambridge**, Cambridge, United Kingdom *Nov. 2015 – Oct. 2018*
Ph.D., Machine Intelligence Lab, Department of Engineering
- Microsoft Research Ph.D. Scholar, visiting student at MSR Cambridge (2014–2017)
 - Supervisors: Prof. Roberto Cipolla, Dr. Antonio Criminisi (Microsoft Research), Dr. Matthew Brown (University of Bath)
 - Thesis: Structural Priors in Deep Neural Networks
- Queen’s University**, Kingston, Ontario, Canada *Sep. 2006 – Mar. 2010*
M.Sc., School of Computing
- Supervisors: Dr. Michael A. Greenspan, Robin Harrap
 - Research Interests: 3D Computer Vision, Surface Processing, Object Recognition
 - Thesis Topic: Segmentation and Object Recognition in Mobile Urban LIDAR Data
- University of Toronto**, Toronto, Ontario, Canada *Sep. 2000 – May. 2006*
B.Sc. Honours, Computer Science Co-op: Software Engineering
- Undergraduate research experience with Prof. Richard Zemel
 - Co-op: 1 year of industry experience (see Professional Experience)
- PROFESSIONAL EXPERIENCE**
- NASA Frontier Development Lab**, NASA Ames, Mountain View, California
Invited Researcher *Jul. 2 – Aug. 19 2018*
- Invited to take part in the 2018 NASA Frontier Development Lab, a research accelerator partnering machine learning experts with other domain scientists
 - Increased the efficacy and yield of exoplanets detection over existing methods
 - To be used by NASA for data from Transiting Exoplanet Survey Satellite (TESS)
- Wayve Technologies**, Cambridge, United Kingdom
Research Scientist *Oct. 2017 – Jul. 2018*
- Research into new imitation learning methods for self-driving cars at a seed-level startup
- Microsoft Research**, Cambridge, United Kingdom
Research Intern *Mar. 2014 – Dec. 2014*
- Supervisor: Dr. Antonio Criminisi
 - Worked with a team of researchers on a 9-month special research project exploring deep learning methods for supervised large scale visual recognition
- University of Toronto/University Health Network**, Toronto, Ontario Canada
Research Associate *Mar. 2011 – Nov. 2013*
- Led research/devel. of the Personal Emergency Response System (PERS), a computer vision based fall detection system, hardware/software implementation of prototypes

IBM Canada Limited, Markham, Ontario Canada
DB2 Linux Tester/Developer, DB2 Linux Validation (Co-op) Sept. 2004 – May 2005

- Validated DB2 for beta and release candidate Linux distributions on 4 different computer architectures, and numerous pre-release hardware platforms

SELECTED
PUBLICATIONS
& PATENTS*

Deep Roots: Improving CNN Efficiency with Hierarchical Filter Groups

Yani Ioannou, Duncan Robertson, Roberto Cipolla, Antonio Criminisi
30th IEEE Conference on Computer Vision and Pattern Recognition (CVPR)
Honolulu, Hawaii, USA Jul. 21 – 26, 2017

Measuring Neural Net Robustness with Constraints

Osbert Bastani, **Yani Ioannou**, Leonidas Lampropoulos, Dimitrios Vytiniotis, Aditya Nori, Antonio Criminisi
13th Annual Conference on Neural Information Processing Systems (NIPS)
Barcelona, Spain Dec. 5 – 10, 2016

Refining Architectures of Deep Convolutional Neural Networks

Sukrit Shankar, Duncan Robertson, **Yani Ioannou**, Antonio Criminisi, Roberto Cipolla
29th IEEE Conference on Computer Vision and Pattern Recognition (CVPR)
Las Vegas, Nevada, USA Jun. 27 – 30, 2016

Training CNNs with Low-Rank Filters for Efficient Image Classification

Yani Ioannou, Duncan Robertson, Jamie Shotton, Roberto Cipolla, Antonio Criminisi
International Conference on Learning Representations (ICLR) 2016
San Juan, Puerto Rico May 2 – 4, 2016

Decision Forests, Convolutional Networks and the Models in-Between

Yani Ioannou, Duncan Robertson, Darko Zikic, Peter Kotschieder, Jamie Shotton, Matthew Brown, Antonio Criminisi
Microsoft Research Technical Report #2015-58 Apr. 1, 2015

Segmentation of Brain Tumor Tissues with Convolutional Neural Networks

Darko Zikic, **Yani Ioannou**, Antonio Criminisi, Matthew Brown
MICCAI workshop on Multimodal Brain Tumor Segmentation Challenge (BRATS)
Boston, Massachusetts, USA Sep. 14, 2014

Emergency Detection and Response System and Method

Alex Mihailidis, Babak Tatti, **Yani Ioannou**, Jennifer Boger, James E. Gastle
United States Patent Application #13/655,920 April 25, 2013

Difference of Normals as a Multi-Scale Operator in Unorganized Point Clouds

Yani Ioannou, Babak Taati, Robin Harrap, Michael Greenspan
IEEE International Conference on 3D Imaging, Modelling, Processing, Visualization and Transmission (3DIMPVT)
Zurich, Switzerland Oct. 13 – 15, 2012

VOLUNTEER
EXPERIENCE

Linux Kernel - Open Source Software Development

- Linux 2.6.13, “dynamic sysfs attribute” patch for driver core allowed significant clean-up of most kernel drivers, reducing some by up to 40% in binary module size.
- Linux 2.6.17, “IPMI sysfs” patch ported IPMI subsystem to the 2.6 sysfs/driver model

Point Cloud Processing Library (PCL) - Open Source Software Development

- PCL is an open source library for 3D computer vision and processing of point clouds.

*Please see my Google Scholar profile for a full list of publications and patents

TEACHING EXPERIENCE	University of Cambridge , Cambridge, United Kingdom	Oct. 2016 – Dec. 2017
	<i>Demonstrator</i>	
	Taught laboratory sessions, marked assignments <ul style="list-style-type: none"> • 1B Introduction to C++ (1st year) 	Lent 2016, 2017
	University of Bath , Bath, United Kingdom	Jan. 2013 – Mar. 2013
	<i>Teaching Assistant</i>	
	Taught laboratory sessions, marked assignments <ul style="list-style-type: none"> • Principles of Programming 2 (1st year) 	Semester 2, 2013
	University of Toronto , Toronto, Ontario Canada	Sept. 2000 – Dec. 2008
	<i>Undergraduate/Graduate Teaching Assistant</i>	
	Taught tutorials, held office hours, marked midterms, exams and assignments <ul style="list-style-type: none"> • Computer and Network Security (4th year) • Microprocessor Systems (3rd year) • File Structures and Data Management (2nd year) • Methods and Tools for Software Development (2nd year) • Introduction to Computer Science (1st year) • Introduction to Computer Programming (1st year) • CSCD27 Computer and Network Security • CSCC85 Microprocessor Systems • CSCB28 File Structures and Data Management • CSCB09 Methods and Tools for Software Development • CSCA58 Introduction to Computer Science • CSCA06/A08 Introduction to Computer Programming 	Fall 2008 Spring 2004, 2005 Spring 2003 Spring 2003 Spring 2002 Fall 2001 – 2005 Fall 2008 Spring 2004, 2005 Spring 2003 Spring 2003 Spring 2002. Fall 2001 – 2005
	Queen's University , Kingston, Ontario Canada	Sept. 2006 – May 2008
	<i>Teaching Assistant</i>	
	Taught labs, held office hours, marked midterms and assignments. <ul style="list-style-type: none"> • Neural and Genetic Computing (4th year) • Introduction to Computing Science (1st year) • Elements of Computing Science (1st year) • CISC452 Neural and Genetic Computing • CISC124 Introduction to Computing Science • CISC101 Elements of Computing Science 	Fall 2007 Spring 2007, 2008 Fall 2006 Fall 2007 Spring 2007, 2008 Fall 2006