

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 NeurIPS, 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**
- University of Toronto**, Toronto, Ontario Canada *Jan. 7 – May. 7 2019*
Sessional Lecturer
- Course instructor, responsible for lectures, assignments, and exams.
 - CSC320: Introduction to Visual Computing (3rd year)
- NASA Frontier Development Lab**, NASA Ames, Mountain View, California *Jul. 2 – Aug. 19 2018*
Invited Researcher
- 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 *Oct. 2017 – Jul. 2018*
Research Scientist
- Research into new imitation learning methods for self-driving cars at a seed-level startup
- Microsoft Research**, Cambridge, United Kingdom *Mar. 2014 – Dec. 2014*
Research Intern
- 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

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

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.

TEACHING
EXPERIENCE

University of Toronto, Toronto, Ontario Canada
Sessional Lecturer **Dec. 2018 – May. 2019**
Course instructor, responsible for lectures, assignments, and exams.

- Introduction to Visual Computing (3rd year) Winter, 2019

University of Cambridge, Cambridge, United Kingdom
Demonstrator **Oct. 2016 – Dec. 2017**
Taught laboratory sessions, marked assignments

- 1B Introduction to C++ (1st year) Lent 2016, 2017

University of Bath, Bath, United Kingdom
Teaching Assistant **Jan. 2013 – Mar. 2013**
Taught laboratory sessions, marked assignments

- Principles of Programming 2 (1st year) Semester 2, 2013

University of Toronto, Toronto, Ontario Canada
Undergraduate/Graduate Teaching Assistant **Sept. 2000 – Dec. 2008**
Taught tutorials, held office hours, marked midterms, exams and assignments

- Computer and Network Security (4th year) Fall 2008
- Microprocessor Systems (3rd year) Spring 2004, 2005
- File Structures and Data Management (2nd year) Spring 2003
- Methods and Tools for Software Development (2nd year) Spring 2003
- Introduction to Computer Science (1st year) Spring 2002
- Introduction to Computer Programming (1st year) Fall 2001 – 2005

Queen's University, Kingston, Ontario Canada
Teaching Assistant **Sept. 2006 – May 2008**
Taught labs, held office hours, marked midterms and assignments.

- Neural and Genetic Computing (4th year) Fall 2007
- Introduction to Computing Science (1st year) Spring 2007, 2008
- Elements of Computing Science (1st year) Fall 2006