

Yani Ioannou

CONTACT INFORMATION Jesus College
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SKILLS SUMMARY

- Microsoft Research Ph.D. Scholar, post-viva at the University of Cambridge under the direction of Prof. Roberto Cipolla and Dr. Antonio Criminisi (Microsoft Research)
- Significant research experience in the fields of deep learning and computer vision, with an education at top research universities (Toronto, Cambridge), experience in one of the top industrial research labs in the field (Microsoft Research Cambridge), and software development experience at the largest software lab in Canada (IBM's Toronto Lab)
- Open-source development, notably in the Linux kernel and Point Cloud Library (PCL)

EDUCATION

University of Cambridge, Cambridge, United Kingdom *Nov. 2013 – Present*
Ph.D. Student, Machine Intelligence Lab, Department of Engineering

- Microsoft Research Ph.D. Scholar, visiting student at MSR Cambridge
- 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

- Specialist : Computer Science: Software Engineering
- 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
- Tasked with exploring methods to increase the efficacy and yield of exoplanets detection from the 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

* **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 is the operating system used by 19 Million PCs, the 79% of smartphones running Android, and 97% of web servers, including those of Google, Facebook and Amazon
- 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.

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

* Publications that are mainly my own work

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 	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> Fall 2007 Spring 2007, 2008 Fall 2006 Fall 2007 Spring 2007, 2008 Fall 2006