Boris **Ivanovic**

Stanford, California, USA

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Education

Stanford University *September 2016 - Present*

Master of Science (MS) - Computer Science - GPA: 3.91 *Stanford, CA - USA*

- Conducted research in machine learning, computer vision, robotics, and data science.
- Course Assistant for *CS231A: Computer Vision From 3D Reconstruction to Recognition*.

University of Toronto *September 2012 - June 2016*

Bachelor of Applied Science (BASc) with High Honours - Engineering Science - GPA: 3.93 *Toronto, ON - Canada*

- Undergraduate thesis with Professors Raquel Urtasun and Sanja Fidler in Visual SLAM and 3D Scene Segmentation.
- Award-winning TA for *CSC411: Introduction to Machine Learning*.
- Won the final *AER201: Engineering Design* competition.
- Ranked in the top 10% of Engineering Science students (June 2014).

Publications

International Peer-Reviewed Conference Proceedings

Generative Modeling of Multimodal Multi-Human Behavior

B. Ivanovic, E. Schmerling, K. Leung, M. Pavone

(In Submission) IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), 2018, Madrid, Spain

ADAPT: Zero-Shot Adaptive Policy Transfer for Stochastic Dynamical Systems

J. Harrison, A. Garg, **B. Ivanovic**, Y. Zhu, S. Savarese, L. Fei-Fei, M. Pavone

International Symposium on Robotics Research (ISRR), 2017, Puerto Varas, Chile

Blog Posts

How to Deploy Deep Learning Models with AWS Lambda and TensorFlow

B. Ivanovic, Z. Ivanovic

Amazon Web Services (AWS) AI Blog, 2017

Experience

Amazon.com *June 2017 - September 2017*

Prime Air SDE Intern *Seattle, WA - USA*

- Worked with Principal Research Scientist Ishay Kamon in the Autonomy team.
- Designed and implemented a novel state-of-the-art deep learning approach for a specific computer vision task within the team, outperforming existing models by 10x.
- The project was completed successfully and a full-time Research Scientist return offer was extended.

Stanford University *January 2017 - June 2017*

Independent Research Project *Stanford, CA - USA*

- Worked in the Computer Vision and Geometry Lab (CVGL) and Autonomous Systems Lab (ASL) with Professors Silvio Savarese and Marco Pavone on making reinforcement learning more robust with control theory.
- Tackled the problem of policy transfer in reinforcement learning, applying model-predictive control to provide safety guarantees when transferring a learned policy from one environment to another with different dynamics.
- Our work was accepted to the International Symposium on Robotics Research (ISRR) 2017, held in Puerto Varas, Chile.

Stanford University *September 2016 - June 2017*

Research Assistant *Stanford, CA - USA*

- Worked in the Stanford Network Analysis Project (SNAP) Lab with Professor Jure Leskovec on analyzing large-scale physical activity data with modern data science methods.
- Efficiently cleaned, preprocessed, and distilled 3 TB of user physical activity data from over 2 million users of a mobile fitness app. Obtained scientific results with data visualization, statistical analyses (such as regressions and confidence metrics), and computational methods (including hierarchical bootstrapping).
- Showed significant results relating a location's walkability, weather, and climate to an individual's physical activity. This work has very wide implications, as physical inactivity is a major global pandemic responsible for over 5 million deaths per year.

Amazon.com *May 2016 - August 2016*

Prime Air SDE Intern *Seattle, WA - USA*

- Worked with former NASA Astronaut Neil Woodward in the Flight Test team.
- Designed and built fault-tolerant, scalable software and hardware to autonomously collect and process relevant flight test data from numerous locations for internal consumption.
- The project was completed successfully and a return offer was extended.

ETH Zurich *May 2015 - August 2015*

Summer Research Intern *Zurich - Switzerland*

- Worked with Professor Raffaello D'Andrea in the Institute for Dynamic Systems and Control, specifically the Flying Machine Arena.
- Removed superfluous code from an open source motor controller and implemented new features such as motor calibration, emergency safety states, and a better motor startup routine in C.
- Simulated dynamic motor and propeller system responses in Python.
- Technology used: STM32 C Code, Motor Controller PCB Chips, Quadrotor Flying Vehicles.

Amazon.com *May 2014 - July 2014*

SDE Intern *Seattle, WA - USA*

- Worked in the Demand Forecasting team creating a real-time simulation tool. The project was completed successfully and a return offer was extended.
- Worked with Big Data, using the Hadoop framework (MapReduce, HDFS, etc.) to process large amounts of simulation data generated by a machine learning module.
- Created a web service with Spring, designed and implemented a website UI with GWT, and used the AWS SDK to store and retrieve data from S3.
- Gave a presentation to 100+ Amazon employees regarding my project and its design, implementation, and performance.
- Concepts employed: Big Data, Highly Scalable Distributed Systems, and Data Mining.

Awards

University of Toronto *May 2016*

Engineering Science Award of Excellence *Toronto, ON - Canada*

Received for maintaining a CGPA greater than 3.90.

University of Toronto *May 2016*

Computer Science TA Award *Toronto, ON - Canada*

Received for being the best Computer Science TA in the Winter 2016 semester.

National Sciences and Engineering Research Council (NSERC) *April 2016*

NSERC Master's Postgraduate Scholarship (CGS-M) (Declined) *Canada*

The CGS-M Program provides financial support to high-calibre scholars who are engaged in eligible master's programs in Canada.

University of Toronto *September 2012 - June 2016*

Dean's Honour List *Toronto, ON - Canada*

Placed on the Dean's Honour List for all undergraduate semesters.

University of Toronto *September 2012*

University of Toronto Scholarship *Toronto, ON - Canada*

Received for being one of the top 300 entrants to the University of Toronto in 2012.

Skills

Programming	Python, Java, MATLAB, C/C++, Scala, Verilog, Assembly, R, Web (HTML5/CSS3/JavaScript)
Robot Learning	TensorFlow, MXNet, Theano, MuJoCo, Box2D, MazeBase, ROS
Data Science	NumPy, Pandas, Seaborn, Matplotlib, Statsmodels
Libraries/SDKs	AWS SDK, Hadoop, Spark, Node.js, GWT, Android SDK