

# ROLLEN S. D'SOUZA

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## Publications

V. Joukov, R. D'Souza and D. Kulić, *Human pose estimation from imperfect sensor data via the Extended Kalman Filter*, International Symposium on Experimental Robotics, 2016. [Presented, In Press]

## Academic Work Experience

**Teaching Assistant** 2016/09—2016/12

Assisted students in the first year SE101 course. Managed a weekly 2-hour lab section and marked weekly quiz submissions as well as a final course project. Engaged with students through Piazza and office hours.

**Undergraduate Research Assistant** 2016/05—2016/08

Supervised by Prof. Dana Kulić.

**Undergraduate Research Assistant** 2015/01—2015/04

Implemented real-time inverse kinematics algorithm for human motion capture data. Supervised by Prof. Dana Kulić.

## Industry Work Experience

**Medical Software Developer Co-op** 2015/09—2015/12

*Sunnybrook Health Sciences Centre*

C++ Linux and Windows Application development contributing to the Vurtigo image-guidance visualization software for cardiac interventions.

**Software Development Engineer Co-op** 2014/05—2014/08

*The Coalition Studio, Microsoft*

Created tools to support design and development workflows in video games. Wrote rendering shaders and created a background loader for the Unreal Game Engine. Contributed to *Gears of War 3: Ultimate Edition* and *Gears of War 4* Xbox One video games.

**Software Development Engineer Co-op** 2013/09—2013/12

*The Coalition Studio (formerly known as Black Tusk), Microsoft*

Developed tools to report on runtime video game performance.

**Multimedia Software Developer** 2012/05—2012/08

*University of Waterloo*

Developed video conferencing software with an editable whiteboard using a Flash front-end and a Java EE back-end.

## Honours and Awards

- 2016 NSERC Undergraduate Student Research Assistantship (USRA)
- 2016 General Motors (GM) Innovation Award
- 2015 NSERC Undergraduate Student Research Assistantship (USRA)
- 2014 International Genetically Engineered Machine (iGEM) Competition — Best Model
- 2011 University of Waterloo President's Scholarship

## Activities and Projects

**Project: Real Time Operating System** 2016/01—2016/04

*CS452, University of Waterloo*

Implemented (hard) real time operating system in C, from the ground up, for the purpose of autonomously managing trains on a physical track.

**Math Modeller**

2015/01—2015/12

*International Genetically Engineered Machine (iGEM) Competition - Team Waterloo*

Developed and analyzed mathematical models of the CRISPR-mRNA interference mechanism alongside interdisciplinary team of mathematics, physics, engineering and biology undergraduate students. Main contribution consisted of performing global sensitivity analysis.

**Volunteer First Responder**

2015/01—2015/12

*Campus Response Team, FEDS*

Provided first aid services at student events and the student activity complex. Certified Standard First Aid/CPR-HCP.

## Education

**BSE** (*Expected 2017/05*)

Honours Software Engineering

Joint Honours Applied Mathematics

University of Waterloo