

Gautham Vasani

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EDUCATION

UNIVERSITY OF ALBERTA | M.Sc (THESIS) IN COMPUTING SCIENCE

Expected Aug 2017 | Edmonton, AB, Canada • Cum. GPA: 3.9/4.0

Courses: Reinforcement Learning in Artificial Intelligence | Intro to Machine Learning | Convolutional Neural Nets for Image Processing | Applications of Reinforcement Learning: Actor-Critic Algorithms | Medical Robotics

NATIONAL INSTITUTE OF TECHNOLOGY (NIT), TIRUCHIRAPPALLI | B.TECH IN INSTRUMENTATION AND CONTROL ENGINEERING

First Class | May 2015 | Tiruchirappalli, TN, India • Cum. GPA: 8.40 / 10.0

Courses: Data Structures and Algorithms | Linear Algebra & Probability Theory | Modern Control Theory | Digital Signal Processing | Product Design | Biomedical Instrumentation

RESEARCH

LEARNING FROM DEMONSTRATION: TEACHING A MYOELECTRIC PROSTHESIS USING AN INTACT LIMB | ADVISORS: DR. PATRICK M. PILARSKI, BLINC LAB, UNIVERSITY OF ALBERTA

May 2016 – Present | Edmonton, AB

- Using actor-critic reinforcement learning, we're working on methods that would allow an amputee to use their non amputated arm to teach their prosthetic arm how to move through a wide range of coordinated motions and grasp patterns.
- This work was recently submitted to the International Conference On Rehabilitation Robotics (ICORR) 2017

DEEP REINFORCEMENT LEARNING FOR HEX | ADVISORS: DR. NILANJAN RAY, DR. RYAN HAYWARD, UNIVERSITY OF ALBERTA

March 2016 – May 2016 | Edmonton, AB

- Hex is a strategy board game played on a hexagonal grid, theoretically of any size and several possible shapes
- The model is a convolutional neural network, trained with a variant of Q-learning, whose input is player positions and edge connections and whose output is a value function estimating future rewards.

EXPERIENCE

RESEARCH ASSISTANT | WORKING JOINTLY WITH THE BLINC AND RLAI LAB

Labs headed by Dr. Patrick M. Pilarski and Dr. Richard S. Sutton, University of Alberta | April 2016 to Present

- The goal of our work is to create intelligent artificial limbs to extend abilities for people with amputations. We want to develop prosthetic devices that understand, anticipate the needs of an amputee, taking suitable actions to assist the user.

TEACHING ASSISTANT | CMPUT 174: INTRODUCTION TO THE FOUNDATIONS OF COMPUTATION I

Instructors: Dr. Duane Szafron, Dr. Sadaf Ahmed and Dr. Jorg Sander, University of Alberta | Sept 2015 to April 2016

- A problem-based intro to computing science to focus on expressing problems precisely, solving them algorithmically by showing how to construct a solution, and then implementing that solution by writing a program using python

PUBLICATIONS

- Kenny Young, Gautham Vasani, Ryan Hayward, **NEUROHEX: A DEEP Q-LEARNING HEX AGENT**, Computer Games Workshop at IJCAI 2016, July 9th, 2016
- Gautham Vasani, Naresh Balaji R, Gowtham Kumar T.S.B, Aravind Govindan, **A CONTROL STRATEGY FOR AN AUTONOMOUS ROBOTIC VACUUM CLEANER FOR SOLAR PANELS**, Texas Instruments India Educators Conference, IEEE Xplore, April 4th, 2014

LANGUAGES

Most familiar:

C • C++ • Python • ROS • Matlab • Tensorflow

Over 1000 lines:

Embedded C • Octave • Assembly • Theano