

Pooya Abolghasemi

DEEP LEARNING · ROBOTICS · SOFTWARE ENGINEER

Orlando, Florida

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Education

University of Central Florida

PHD IN COMPUTER SCIENCE

- Overall GPA: 3.83/4

Orlando, USA

Fall. 2014 - Present

University of Tehran

B.S. IN COMPUTER ENGINEERING

- Overall GPA: 3.5/4 (16.35/20)

Tehran, Iran

Fall. 2009 - 2014

Publications

Accept Synthetic Objects as Real: End-to-End Training of Attentive Deep Visuomotor Policies for Manipulation in Clutter

Submitted

P ABOLGHAEMI, L BÖLÖNI

Sep 2019

- We proposed a data augmentation technique (Accept Synthetic Objects as Real) and two network models that take advantage of it to train end-to-end robot controllers which operate in the presence of clutter.
- Check out our YouTube Video: <https://youtu.be/GchuLQhG3ug>

Pay attention!-Robustifying a Deep Visuomotor Policy through Task-Focused Attention

CVPR - Long Beach, USA

P ABOLGHAEMI, A MAZAHARI, M SHAH, L BÖLÖNI

June 2019

- We proposed a technique for augmenting a deep visuomotor policy learned from demonstration with a task-focused attention model. The attention is guided by a natural language description of the task – it effectively tells the policy to “Pay Attention!” to the task and object at hand. we show that the proposed policy performs correctly in the presence of a wide class of visual disturbances, exhibiting a behavior reminiscent of human selective attention experiments.
- Check out our YouTube Video: <https://youtu.be/armz9CfjYRg>

Vision-Based Multi-Task Manipulation for Inexpensive Robots Using End-To-End Learning from Demonstration

ICRA - Brisbane, Australia

R RAHMATIZADEH, P ABOLGHAEMI, L BÖLÖNI, S LEVINE

May 2018

- We propose a technique for multi-task learning from demonstration that trains the controller of a low-cost robotic arm to accomplish several complex picking and placing tasks. The controller is a recurrent neural network using raw images as input and generating robot arm trajectories, with the parameters shared across the tasks.
- Checkout our YouTube playlist: <https://goo.gl/qkWAvs>
- Reading Material at CS294-112 Deep Reinforcement Learning course at UC Berkeley - <https://goo.gl/qz8KTt>

From virtual demonstration to real-world manipulation using LSTM and MDN

AAAI - New Orleans, USA

R RAHMATIZADEH, P ABOLGHAEMI, A BEHAL, L BÖLÖNI

Feb. 2018

- we designed an approach where the user demonstrates the task in a virtual environment. These virtual demonstrations are used to teach a deep neural network-based robot controller. Then, the controller is transferred to the physical robot.
- Checkout our YouTube playlist: <https://goo.gl/xER9dx>
- Reading Material at CS294-112 Deep Reinforcement Learning course at UC Berkeley - <https://goo.gl/BvnChM>
- Reading Material at Deep Reinforcement Learning and Control course at CMU: page 52 <https://goo.gl/XgrjC3>

Real-time placement of a wheelchair-mounted robotic arm

Ro-MAN - New York, USA

P ABOLGHAEMI, R RAHMATIZADEH, A BEHAL, L BÖLÖNI

Aug. 2016

- Introduced a metrics and method of how to estimate the best position for a wheelchair mounted arm to perform a manipulation

A Real-Time Technique for Positioning a Wheelchair-Mounted Robotic Arm for Household Manipulation Tasks

AAAI - Workshops - Phoenix, USA

P ABOLGHAEMI, R RAHMATIZADEH, A BEHAL, L BÖLÖNI

Feb. 2016

- Introduced a metrics and method of how to estimate the best position for a wheelchair mounted arm to perform a manipulation

Experience

University of Central Florida

Orlando, FL

PHD STUDENT - MACHINE LEARNING AND ROBOTICS

Fall 2014 - Present

- Published the state of the art papers in Robotics, Machine Learning, Computer Vision conferences.
- Our papers are included as reading material in courses presented at well known universities such as UC Berkeley, CMU
- Thesis title: Task Focused Imitation Learning
- Technologies: Python, Tensorflow, ROS, Chainer

Mosaixsoft Inc.

Los Altos, CA

FULL STACK DEVELOPER - INTERN

May 2015 - Sep 2015

Jan 2016 - Sep 2016

- Implemented a graph visualizer to visualize various cloud components and various other web components
- Technologies: Java, HTML, CSS, Shell Scripts, Docker

University of Tehran Artificial Intelligence and Advanced Robotics laboratory

Tehran, Iran

BACHELOR STUDENT

2012 - 2014

- Implementation of an Expert System to Detect Autistic Children (Bachelor Thesis) Under supervision of Prof. Moradi
- Technologies: MATLAB, PHP, HTML, CSS, C++

Iran Computer and Video Games Foundation

Tehran, Iran

GAME DEVELOPER

2013 - 2014

- Developed a 2D-game with Game Maker Engine
- Technologies: Game Maker

Teaching Assistant

Tehran, Iran

ADVANCED PROGRAMMING, COMPUTER GRAPHICS, SOFTWARE ENGINEERING AND INTRODUCTION TO COMPUTER

2010 - 2013

SYSTEMS

- Teaching assistant for various courses
- Technologies: C/C++, OpenGL, Java

Honors & Awards

2013 **Best Student Game**, 3rd Iran Game Festival

Tehran, Iran

2013 **2nd place**, Iran Game Developers Cup

Kashan, Iran

2012 **3rd place**, Iran Game Developers Cup

Kashan, Iran

Computer Skills

Computer Languages

COMFORTABLE WITH: PYTHON, JAVA, JAVASCRIPT. FAMILIAR WITH: C/C++, C#

Special Purpose Programs and Libraries, Protocols, APIs

TENSORFLOW, CHAINER, ROS, GIT, UNITY, DOCKER, JIRA, JENKINS, OPENGL, MATLAB, GAMEMAKER, MYSQL, XML, JSON