Steven Basart

Computer Science PhD student

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Research Interests

My primary area of focus has been within computer vision. For the years of 2015-2017, I have worked on generative models, specifically GANs, coming up with both a measure and a method to use GANs to interpret other classifiers. I have since begun exploring techniques to make models more robust. The majority of my research focuses on applications of machine learning.

Education

Doctor of Philosophy (Computer Science) 2014 to ongoing
University of Chicago, Chicago, Illinois

Bachelor of Science (Biochemistry and Computer Science) 2010 to 2014
University of Miami, Miami, Florida

Courses

Machine Learning
Robot Planning/AI
Computer Vision
Algorithms
Databases

Teaching

Computational Biology (Autumn 2015)
Intro. to Computer Science (Winter 2016)
Machine Learning(Spring 2016)
Intro. to Computer Science (Autumn 2016)
Machine Learning (Autumn 2017)
Intro. to Computer Science (Autumn 2018)
Machine Learning (Winter 2019)
Machine Learning and Large-Scale Data Analysis (Spring 2019)

Research Experience

Computer Science 2014 to current
I am working with Dr. Greg Shakhnarovich at TTIC in the areas of machine learning and computer vision.

Biochemistry 2011 to 2014
I worked with Dr. Richard Myers at the University of Miami trying to create a generic genetic therapy via transducible gene editing proteins. I ran western blots, gel electrophoresis, transductions, PCR, and electroporation

Technical

Python	C	Java
Pytorch/Tensorflow	Git / SVN	

Experience

Google Brain *Research Intern* **Summer 2018**
I worked in NLP and collaborated with several teams. I worked in the area of Fact Checking related to this paper to deal with the problem of content abuse and also worked with the Google News team. **python, pytorch, tensorflow, apache-beam, flume**

Here Maps *Research Intern* **Summer 2017**
I worked on models to better predict arrival times (ETA estimates) and lane level navigation prediction which can be used for autonomous vehicles. **python, pytorch**

Here Maps *Research Intern* **Summer 2016**
I developed a model that creates road probability maps that can be used to detect differences between artificial maps and the real roads. **python, tensorflow**

Projects

OpenGL Renderer
myRenderer
I created a simple OpenGL renderer to render some height maps and draw some objects. Applies simple lighting and texturing.

BattleShip game over internet

BattleShip

I created a simple Battleship game in C that has a client, server interface.

Publications

Natural Adversarial Examples **ICML 2019 Workshop**

In this work we construct a dataset which captures long tail distributions to highlight where current models fail in terms of generalization.

DIODE: A Dense Indoor and Outdoor DEpth Dataset **2019**

In this work we use a single depth sensor to capture both indoor and outdoor scenes to create the most accurate depth dataset to date.

Analysis of Generative Adversarial Models **2017**

This is my master's work in which I introduce a novel measure for quantitatively assessing the quality of generative models and present a method for utilizing GANs to interpret classifiers.