Shotaro Ikeda

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shotaroikeda

Studious, Ambitious, and Innovative Artificial Intelligence Researcher.

Education

2014–Now **BS. Computer Science**, *University of Illinois at Urbana-Champaign*, Urbana, IL.

GPA 3.72/4.0

Graduation May 2018

Work experience

2017–Now **Undergraduate Research Assistant**, *University of Illinois at Urbana-Champaign*, Urbana, IL.

- Research to give agents spatial awareness.
- Speed up extra supervision networks for Reinforcement Learning.

Summer 2017 **Technical Development Program Intern**, *Capital One*, Richmond, VA.

- Fast, repeatable, and robust solution for comparing data quality of multiple competing services.
- Database comparisons using Python, Numpy, Pandas, and Matplotlib.
- Engaged proof of concept for logo recognition using Deep Learning with Keras.
- Provided mentor-ship to increase validation accuracy from 85% to 96%.

2015–2017 **Course Assistant**, *CS 196*, Champaign, IL.

- Involved in making course materials, quality assurance, and acted as one of the instructors of the class.
- Gave lectures in Theory, Algorithms, Recursion, AI, and Machine Learning.

Winter 2016 **Intern**, *Double Sharp Plus Co. Ltd*, Hachiouji, Japan.

- Object Character Recognition on number plates, mined my own dataset
- Histogram approach had 60% accuracy on test set I provided
- Support Vector Machine Classifier using Local Binary Pattern algorithm, with 50% accuracy
- Implemented Deep Convolutional Neural Network in Tensorflow based off of CAPTCHA, with 80% accuracy

Projects

2017–Now **DFP-PyTorch**.

- State of the art agent that won ViZDoom AI Competition 2016 (Deathmatch).
- Implemented *Learning to Act by Predicting the Future* (Dosovitskiy, et. al) in PyTorch.
- Implemented general experimentation architecture for future research.
- Implemented a generalization for multiple sparse input streams.

Summer 2017 **FCRN-PyTorch**.

- State of the art Depth Prediction Network.
- Implemented *Deeper Depth Prediction with Fully Convolutional Residual Networks* (Laina, et. al) in PyTorch.
- Provided additional base layers (ResNet-18, ResNet-34) for further experimentation.

Spring 2017 **CartPole-DQN**.

- Implemented a Deep Q-Network in PyTorch.
- Experimented with Reward Shaping to provide additional supervision and help convergence.

Spring 2017 **Wide Residual Network**.

- A variation of the cutting-edge ResNet architecture.
- Implemented *Wide Residual Networks* (Zagoruyko, et. al) in Tensorflow.
- Obtained 93.9% accuracy training on CIFAR-10.

Spring 2017 **Autoencoders**.

- Implemented a Variational Autoencoder (VAE) and Stacked Denoising Autoencoder in Tensorflow.
- Experimented with different activation functions and latent variable sizes.