Andreas Karagounis

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EDUCATION

Brown University, Providence, RI — SEPTEMBER 2017 - MAY 2018

Master of Science in Computer Science, 3.8/4.0

Brown University, Providence, RI — SEPTEMBER 2013 - MAY 2017

Bachelor of Science Computer Science-Economics, 3.5/4.0

Courses Include: Machine Learning, Computer Vision, Computational Probability and Statistics, Data Science

EXPERIENCE

Insight Data Science, New York City, NY — *AI Fellow* — SEPTEMBER 2018 - PRESENT

X-Ray Vision

- Built a web app using **Flask** that serves a trained **Tensorflow** model
- A radiologist can upload an X-Ray and receive the probability that an image contains an abnormality along with the highlighted region of abnormality using SmoothGrad images (saliency maps)
- Ran multiple experiments on **AWS** using **Tensorflow** exploring various Convolutional Neural Network (CNN) architectures, initialization methods and loss functions

Serre Lab, Providence, RI — *Research Assistant* — JANUARY 2017 - SEPTEMBER 2018

Deep Learning for Pathology

- Trained deep CNNs in **TensorFlow** to detect tumors in magnified histopathology slides of prostate cancer
- Ran experiments on multiple 8 GPU servers achieving a malignant vs benign accuracy of 92% and multiclass cancer grading accuracy of 85% (on par with state of the art results)
- Abstract: *"Automated Histopathologic Diagnosis and Gleason Grading of Prostate Biopsies with Machine Learning"* accepted to American Urological Association (AUA) 2019

Deep Learning for Connectomics

- Trained deep CNNs for automating 2D and 3D segmentation of neural processes in Electron Microscopy (EM) Images
- Collaborated with the Neuroscience Department to apply domain knowledge to improve CNN models
- Implemented baselines that include variations of 2D U-Nets, 3D U-Nets and Fully Convolutional DenseNets in **Tensorflow**

Modelling Human Vision Using Convolutional Neural Networks

- Ran experiments to understand how layer depth of CNNs correlate with human vision
- Built data pipeline in **TensorFlow** that extracts features from each convolution and fully connected layer of a CNN and trains and tests a Support Vector Machine (SVM) on each layer
- Retrieved and parsed human web experimental data using **SQL** and **Python** to compute correlations between human categorizations and the categorizations generated by the trained SVMs

Brown Datathon, Providence, RI — *Workshop Facilitator* — MARCH 2017 AND MARCH 2018

- Held workshop on fundamental techniques and properties of deep learning and demonstrated how to build a neural network in **Keras** for predicting house prices
- Held workshop creating an interactive K-means clustering **Shiny R** web app

Black Sea Trade and Developmental Bank, Thessaloniki, Greece — *Intern* — JUNE 2014 - AUGUST 2014

- Analyzed and presented financial and geographical data on clients in banking sector using **Excel**
- Identified Greek companies in need of long term loans using financial statements
- Successfully identified a marble company in need of a loan exceeding 8 million euros and negotiated relations with the Bank

SKILLS

Programming Languages

Python (proficient), **SQL** (proficient), **Java** (familiar with), **C** (familiar with)

Frameworks

TensorFlow (proficient), **Keras** (familiar with), **AWS** (familiar with)