Richard Higgins

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EDUCATION

UNIVERSITY OF MICHIGAN
Masters/PhD in Computer Science
Begun August 2017 | Ann Arbor, MI

UNIVERSITY OF MARYLAND
BS in Computer Science
BS in Neurobiology and Physiology
Dec 2014 | College Park, MD
Presidential Scholarship (Merit)
Citation in Life Sciences

PROJECTS

Github:	github.com/relh
Devpost:	devpost.com/relh
Kaggle:	kaggle.com/higgins
LinkedIn:	linkedin.com/in/relh
Website:	relh.net

COURSEWORK

GRADUATE
Reinforcement Learning
Self-Driving Cars, Perception + Control
Machine Learning
Matrix Methods for Signal Processing
Advanced Topics in Computer Vision
Natural Language Processing

UNDERGRADUATE
Artificial Intelligence
Evolutionary Computation
Bio-Inspired Robotics
Mammalian Physiology (TA)

COURSERA
Neural Networks for ML

SKILLS

PROGRAMMING
Python • Java • MATLAB
C • Unix • R • Javascript • C# • Go

TECHNOLOGY
PyTorch • Keras • AWS • Vim
Docker • Git • Flask • Android
Tensorflow • Chainer • Unity •
Kubernetes • React • JQuery

GRE

168 (95%)	Quantitative
163 (92%)	Verbal
4.5 (80%)	Analytical Writing

AWARDS

Finalist - HackMIT - 2013

RESEARCH

FOUHEY AI LAB | Researcher May 2019 – Present | Ann Arbor, MI
- Predicting solar imagery between the AIA and HMI sensor bands of SDO

VISION & LEARNING LAB | Researcher May 2018 – May 2019 | Ann Arbor
- Created new neural networks for object and relationship detection using associative embeddings, graph networks, and object parts

DEPT. COMPUTATIONAL MEDICINE | Software Engineer
Aug 2016 – Oct 2016 | Ann Arbor, MI
- Constructed topologically associated domains and analyzed RNA-seq data to identify differential gene expression

NEUROSCIENCE & COGNITIVE SCIENCES | Researcher
Jan 2014 – Jun 2014 | College Park, MD
- Detected seizures in mouse EEG recordings using clustering and max-margin techniques in MATLAB

EVOLUTION OF VISUAL COMMUNICATION LAB | Researcher
Sep 2011 – Apr 2012 | College Park, MD
- Turned fish images into false-color analogs for different cone opsins in Java

EXPERIENCE

EECS 442 - COMPUTER VISION | Graduate Student Instructor
Dec 2018 – May 2019 | Ann Arbor, MI
- Led discussions, created assignments with Numpy and Pytorch in Python, graded projects, and hosted office hours for ~150 upper-level CS students

VOXEL 51 | Computer Vision Engineering Intern
Nov 2018 – March 2019 | Ann Arbor, MI
- Incorporated and trained various object detection neural networks as part of a video analysis platform to identify objects in dashcam footage

GIGSTER | Software Engineering Consultant
Aug 2016 – July 2018 | San Francisco, CA & Remote
- Developed a fast style-transfer service on AWS that processes millions of images/day for a social media company
- Built a Generative Adversarial Network (GAN) service that performs face attribute transformation for a social media company
- Built a Convolutional Neural Network (CNN) backend to provide object recognition in a launched iOS application for a Fortune 500 company
- Designed multiple CNN based computer vision systems for Fortune 500 clients with applications including casinos, fashion, and appliances

UNSCAN | Founder | Aug 2015 – May 2016 | New York, NY
- Built a document processing pipeline on AWS using custom LSTMs for OCR

REDSPREAD | First Engineer | Mar 2015 – Aug 2015 | Mountain View, CA
- Developed machine learning tools to automatically scale Kubernetes pods
- Founding team of a YCombinator company acquired by CoreOS

PUBLICATIONS

Higgins GA, Georgoff P, Nikolian V, Allyn-Feuer A, **Higgins R**, et al. Network Reconstruction Reveals that Valproic Acid Activates Neurogenic Transcriptional Programs in Adult Brain Following Traumatic Injury. Pharm Res.

Murase S, Lantz CL, Kim E, Gupta N, **Higgins R**, et al. Matrix Metalloproteinase-9 Regulates Neuronal Circuit Development and Excitability. Mol Neurobiol.