https://andrewnc.github.io

Andrew Carr

andrewcarr06@gmail.com
(509)-654-8520

Work Experience

Qualtrics - Machine Learning Engineer, Intern May - Aug 2018

- Achieved ∼96% accuracy with a .005% false positive rate, matching state of the art on phishing detection by researching and implementing system using sophisticated NLP feature engineering and machine learning
- Increased speed of system 3x resulting in a 63% reduction in hardware costs while handling 3 million daily requests by engineering asynchronous API using parallel processing and high performance computing techniques
- Identified, explored, and implemented state of the art emerging topic tracking system which allowed my team to reach their stretch goals for the quarter
- The final estimated impact of my internship is $300k - 500k in yearly savings
- Utilized: python, parallel processing, scala, javascript, html/css, machine learning, git, docker

Amazon Alexa Prize Team Eve - Machine Learning Researcher Jan - Apr 2018

- Designed and built an offensive speech filtering system using probabilistic methods, which performed ∼3% better than current industry standards
- Researched and designed a complex sentiment analysis tool that classified sentences as having complex sentiment used for noteworthy knowledge retrieval
- Utilized: python, natural language processing, client/server architecture, naive bayes

BYU Math/Computer Science Department 2017 - 2018

Competitive Coding Instructor, Control Theory TA, Graduate Deep Learning TA

- Designed a course targeted to teach applied math students about technical problem solving while also teaching interview strategy, and various programming languages
- Developed computer vision curriculum for a control theory class and built an autonomous following car
- Developed deep learning labs involving many fundamental concepts and ran help sessions to assist student's learning

Perception, Control, and Cognition Lab - Deep Learning Researcher Dec 2016 - Present

- Explored relationship between bayesian methods and deep learning
- Researched attribution techniques for black box machine learning
- Delved into differential geometry to improve machine learning generalization
- Develop system to improve MRI quality by utilizing deep manifold learning
- Designed deep architecture to improve hearing aid quality resulting in signal to noise ratio increase of 197%

Carnegie Mellon University - IT Lab Research Fellow June - Aug 2015

- Excelled in machine learning course work as a top 3 student in the cohort, achieving a 4.0
- Analyzed data and developed a custom web game to help local refugees learn English
- Utilized: python, c++, javascript

Other Experience

Start up acquisition: Founded Legal Leaf and lead a team of 3 while building product. Experienced 10x growth in 8 months which resulted in our acquisition. Product awarded *most innovative* and *best use of AI* from GLH Utah

Communication: Selected by faculty and staff to represent my college's 4,000+ students by presenting my research to BYU's $1 million+ donors and top administration.

1^{st} **place BYU ACM Hackathon 2016**: Created *Mathify* app using polynomial interpolation to display text as math

1^{st} **place BYU ACM Hackathon 2017**: Created Auto Dino program to perfectly play the chrome dino no wifi game

2^{nd} **place BI Wolff Hackathon**: Built prescriptive ML solution to predict individual risk of becoming homeless

Computer Vision/Control Theory: Developed computer vision curriculum for a control theory class and built an autonomous following car

Education

M.S. Computer Science; 4.0 Apr 2020
Brigham Young University *Provo, UT*

B.S. Applied and Computational Mathematics; 3.81 Apr 2018
Brigham Young University *Provo, UT*