

Andrew Carr

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WORK EXPERIENCE

Machine Learning Research Intern

May 2018 - Aug 2018

Qualtrics

Provo, UT

- Researched and implemented phishing detection tool using sophisticated feature engineering, random forest, and logistic regression techniques. Achieved ~96% accuracy with a .005% false positive rate, matching state of the art
- Engineered and developed asynchronous API using parallel processing and high performance computing techniques to achieve a 3x speed up resulting in a 63% reduction in hardware costs and handling 3 million daily requests
- Identified, explored, and implemented state of the art emerging topic tracking system using a hybrid of LDA and Kalman filter techniques. This system helped my team to reach their stretch goals for the quarter
- The final estimated impact of my internship is \$300k - 500k in yearly savings

Machine Learning Researcher

Jan 2018 - Apr 2018

Amazon Alexa Prize Team Eve

Provo, UT

- 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. This was used for noteworthy knowledge retrieval to build out the knowledge base of our social bot

Deep Learning Research Assistant

Dec 2016 - Present

BYU Perception, Control, and Cognition Lab

Provo, UT

- Developed parallel solutions to augment arbitrary image data sets and simulate MRI results, reducing processing time by 300%
- Designed and built a deep learning platform to reduce background noise for hearing aid users resulting in a system that increased the signal to noise ratio by 197%
- Detected and resolved with various bugs in learning algorithms and probabilistic programming models

BYU Math/Computer Science Department

Provo, UT

MATH 495R - Competitive Coding Instructor

Aug 2017 - Apr 2018

MATH 436 - Control Theory TA

Jan 2018 - Apr 2018

CS 501R - Graduate Deep Learning TA

Sep 2018 - Present

- 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

IT Lab Research Fellow

June 2015 - Aug 2015

Carnegie Mellon University

Pittsburgh, PA

- 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
- Performed lit review and wrote secondary research work on the efficacy of police body cameras

OTHER EXPERIENCE

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.

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

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

2nd place Global Legal Hackathon Utah: Made a chrome extension using NLP to summarize terms and conditions

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

EDUCATION

M.S. Computer Science

Apr 2020

Brigham Young University

Provo, UT

B.S. Applied and Computational Mathematics; 3.81

Apr 2018

Brigham Young University

Provo, UT