

EDUCATION

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**PhD Computer Science (Starting Fall 2022)***University of Washington, advised by Yejin Choi*

Apr 2027

Seattle, WA

**MS Computer Science; 4.00***Brigham Young University, advised by David Wingate*

Aug 2022

Provo, UT

**BS Applied and Computational Mathematics, minor in Computer Science; 3.89***Brigham Young University*

Apr 2021

Provo, UT

**GRE, 169 / 170 Quantitative (96<sup>th</sup> percentile), 165 / 170 Verbal (96<sup>th</sup> percentile)**SKILLS

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**Python, PyTorch, Numpy, Pandas, Huggingface, SQL, Unix/Bash, Git, LaTeX, Docker**

Some proficiency in Tensorflow, Julia, Java, C++, data scraping, and web development

WORK EXPERIENCE

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**Perception, Cognition, and Control Laboratory - Research Assistant**

Apr 2020 - Present

- Using language models (GPT-3, T5), achieved human-level performance on difficult text tasks
- Explored effect of prompt engineering and finetuning on state of the art LMs
- Integrated modern ML techniques and mechanical engineering techniques for Soft Robotics manipulation
- Coordinated with other departments and universities to advance the technology of Soft Robotics
- Used Deep Learning/Reinforcement Learning to master difficult control environments

**Double River Investments - Machine Learning Engineer**

Jun 2020 - Aug 2021

- Developed novel models using state of the art Deep Learning techniques to inform trading algorithms
- Implemented and replicated results from research papers
- Validated models on historic, recent, and live trading data
- Created pipeline for production so model could be used in real time by multi-million dollar hedge fund

**Gray Falcon - Deep Learning Consultant**

Dec 2019 - Apr 2020

- Combined several state of the art NLP techniques to tackle a language problem that saved thousands of man-hours
- Created a model that performed with 98% validation accuracy

**Math Department, BYU - Competitive Coding Instructor**

Jan 2020 - Apr 2020

- Developed and taught coursework from scratch
- Worked one-on-one to explain concepts and difficult algorithms

**Computer Vision Lab - Research Assistant**

Feb 2019 - Dec 2019

- Worked on research projects to address Pose Correspondence (individually) and AI on the Edge (in group)
- Developed cutting edge algorithm to interpolate pose correspondence from video data

PUBLICATIONS

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- **Sorensen**, Robinson, Rytting, Shaw, Rogers, Delorey, Khalil, Fulda, Wingate (2022) An Information Theoretic Approach to Prompt Engineering Without Ground Truth Labels. *Association for Computational Linguistics, 2022*  
<https://arxiv.org/pdf/2203.11364.pdf>
- Johnson, Quackenbush, **Sorensen**, Wingate, and Killpack (2021) Using First Principles for Deep Learning and Model-Based Control of Soft Robots. *Front. Robot. AI* 8:654398. doi: 10.3389/frobt.2021.654398

## RELEVANT PROJECTS

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**Solve Reinforcement Learning Environments:** Used several DL/ML techniques to solve complex control environments from OpenAI's gym, including implementing Proximal Policy Optimization (PPO) from scratch

**Deepfake Detector Facebook Competition:** Implemented 3D-CNN and CNN/LSTM from scratch to classify video data as real or synthetic, achieving 83% validation accuracy

**Video Pose Correspondence:** Developed novel active learning approach for data augmentation to address the Pose Correspondence problem, including creating a website for data annotation to interact with SQL database and Amazon Mechanical Turk

**App Game Development:** Independently programmed and released a game on the App Store for iPhone called Flux Ball (10,000+ downloads)