www.github.com/tsor13

Taylor Sorensen

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Education

PhD Computer Science (Starting Fall 2022) — Apr 2027
University of Washington — *Seattle, WA*

MS Computer Science; 4.00 — Aug 2022
Brigham Young University — *Provo, UT*

BS Applied and Computational Mathematics, minor in Computer Science; 3.89 — Apr 2021
Brigham Young University — *Provo, UT*

GRE, 169 / 170 Quantitative (96th percentile), 165 / 170 Verbal (96th percentile)

Skills

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

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 Falkon - 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

- 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
- Rytting, **Sorensen**, Busby, Argyle, Fulda, Wingate, Gubler (2021) No Labeled Data: Coding Social Science Datasets with Language Models. Submitted to ACL 2022 (Association for Computational Linguistics)
- **Sorensen**, Robinson, Rytting, Shaw, Rogers, Delorey, Khalil, Fulda, Wingate (2021) An Information Theoretic Approach to Prompt Engineering Without Ground Truth Labels. Submitted to ACL 2022 (Association for Computational Linguistics)

Relevant Projects

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 Correspondenc: 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: Indepemendently programmed and released a game on the App Store for iPhone called Flux Ball (10,000+ downloads)