Jared Fernandez

phone: (408) 832-3234 | email: jaredfern@cmu.edu | web: https://jaredfern.com

Education

Carnegie Mellon University: School of Computer Science 2020 – Present
Ph.D. in Language & Information Technology
Advisors: Yonatan Bisk & Emma Strubell

Northwestern University, *Magna cum Laude* 2015 –2019
B.S. in Computer Science with Honors & B.S. in Electrical Engineering
Advisors: Doug Downey & Thrasos Pappas

Research Experience

Graduate Student Researcher 2020 – Present
Carnegie Mellon University, Language Technologies Institute *Pittsburgh, PA*
- Investigating the practical limitations of deploying neural network models for inference on edge accelerators (SoCs, GPUs, TPUs, etc) such as latency, memory & CPU usage, and power consumption.
- Developing efficient methods for pretraining multimodal language and vision transformer neural networks.

Undergraduate Researcher 2017 – 2019
Northwestern University, EECS Department *Evanston, IL*
- Designed efficient metrics for perceptual similarity of image texture for image retrieval and segmentation
- Designed methods for building commonsense datasets through adversarial authoring & data augmentation
- Proposed weighted importance sampling techniques to select training data for RNN language models

Industry Experience

Software Engineer 2019 – 2020
Google, Search Notifications *Mountain View, CA*
- Pipelined and evaluated the effectiveness of various features for predicting user engagement with targeted Search notifications through experiments on live traffic
- Designed infrastructure to predict user engagement with event-based notification subscriptions

Software Engineering Intern Summer 2019
Google, Dialogflow NLU *Mountain View, CA*
- Improved intent recognition & out-of-domain detection models for user conversations with enterprise chat bots
- Designed pipeline for domain adaptation and finetuning of sentence embedding models. Increased downstream intent recognition by +4.8% acc.

Software Engineering Intern Summer 2018
Google, Assistant on Android Auto *Mountain View, CA*
- Improved query processing in Google Assistant and query handling by Search.
- Built new interfaces for submitting offline queries to improve discoverability for Assistant on Auto.

Fellowships & Awards

NSF Graduate Research Fellowship 2021 – 2024
Carnegie Mellon University Research Fellowship 2020 – 2021

Publications

1. **CIGLI: Conditional Image Generation from Language & Image** *CLVL, 2021*
2. **Generative Data Augmentation for Commonsense Reasoning** *EMNLP Findings, 2020*
3. **CODAH: An Adversarially Authored Question-Answer Dataset for Common Sense** *RepEval, 2019*
4. **Sampling Informative Training Data for RNN Language Models** *ACL-SRW, 2018*
5. **VecShare: A Framework for Sharing Word Representation Vectors** *EMNLP, 2017*

Technical Skills

Languages: Python, C/C++, Java, Shell Scripting, SQL, MatLab, HTML/CSS
Tools & Frameworks: Git, Docker, PyTorch, TensorFlow, NumPy, OpenCV, Android, Vim, LaTeX