Kyle Roth

Provo, UT | kylrth.com | kylrth@gmail.com | kylrth | +1 208 704 9909

EDUCATION

Brigham Young University — **Provo, UT**
B.S., Mathematics; Applied and Computational Mathematics Emphasis (3.9 GPA) — *Dec 2019*

- Minor in computer science; concentration in linguistics
- Relevant coursework: deep learning, NLP, optimization, algorithms, data structures

EXPERIENCE

Emergent Trading — **Chicago, IL**
Intern — *May 2019 - Aug 2019*

- Built an interactive tool to observe trades and prices in Brazilian currency futures using the Bokeh **Python** library
- Wrote fast and extensible analysis code in **C++** to track competitor's responses to market conditions in the Chicago Mercantile Exchange

CamachoLab, Brigham Young University — **Provo, UT**
Research assistant — *Jan 2019 - current*

- Simulated field profiles of photonic chip components in **TensorFlow** using neural networks with resize convolutions
- Built SLURM_gen, a tool to automatically generate and manage simulated datasets in a high-performance computing environment
- Wrote custom resize-convolution layer to improve performance
- Presented early results at the BYU student research conference

Cobalt Speech and Language — **Tyngsboro, MA**
Modeling Intern — *Apr 2018 - Nov 2018*

- Improved accuracy of a neural network model from 76% to 94% for autonomous drone recognition of air traffic control speech using class-based (Thrax) language models
- Wrote **Go** scripts to validate and generate spec files for a natural language understanding engine

PROJECTS

Speech2phone - *senior group project* — *Aug 2018 - May 2019*

- Scored 76% accuracy on phoneme classification of the TIMIT corpus
- Created data caching mechanism for easy dataset access
- Wrote research-style paper describing methods and results

Investigation in Variable-Order CRFs - *grant-funded independent research* — *Oct 2017 - Dec 2018*

- Achieved 71.3% accuracy on ZTC morphology corpus (Basque) with new VoCRF implementation
- Used SLURM-based supercomputer to train memory-intensive models

Custom deep learning setup - *personal project* — *Mar 2019 - current*

- Installed GPU-enabled TensorFlow and **PyTorch** with custom Anaconda environments and IPython kernels
- Hosted JupyterHub environment for multiple users on personal computer

SKILLS & INTERESTS

- **Languages:** Python, C++, Go, Java, Bash, LaTeX
- **Tools:** git, AWS, SQL, MongoDB, PySpark, scikit-learn, NumPy, Pandas
- **Natural languages:** Native English, fluent Spanish, basic Portuguese
- **Sports:** Alpine skiing, distance running, swimming