Kyle Roth

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EDUCATION

Brigham Young University   **Provo, UT**
B.S., Applied and Computational Mathematics Emphasis (3.9 GPA)   *Dec 2019*
- Minor in computer science; emphasis in linguistics
- Relevant coursework: optimization, deep learning, analysis, algorithm design, data structures, computer systems, model uncertainty, data science

EXPERIENCE

Emergent Trading   **Chicago, IL**
Intern   *May 2019 - Aug 2019*
- Built an interactive tool to observe movement 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

Cobalt Speech and Language   **Provo, UT**
Modeling Intern   *Apr 2018 - Nov 2018*
- Improved accuracy of a neural network model for autonomous drone recognition of air traffic control speech from 24% to 6% error, 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

Investigation in Variable-Order CRFs - *independent research project*   *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, Bash, Java, LaTeX
- **Tools:** Git, AWS, Linux, SQL, MongoDB, PySpark, SLURM, scikit-learn, NumPy
- **Natural languages:** Native English, fluent Spanish, basic Portuguese
- **Sports:** Alpine skiing, distance running, swimming