

# Kyle Roth

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## EXPERIENCE

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### Cobalt Speech and Language

*Speech scientist (full time)*

remote

Jan 2020 - current

- Built an online training server for Kaldi speech recognition models, using Go to create a parallel pipeline for serving data to multiple models on separate GPUs
- Implemented state-of-the-art algorithms (such as the learning rate range test and adaptive filtering) to set learning rate and momentum in an online training setting

### Emergent Trading

*Software developer (intern)*

Chicago, IL

May - Aug 2019

- Wrote fast market analysis code in C++ to track competitors on currency markets at the Chicago Mercantile Exchange
- Built an interactive tool to observe trades and prices in Brazilian currency futures using the Bokeh Python library

### CamachoLab, Brigham Young University

*Research assistant (part time)*

Provo, UT

Jan - Dec 2019

- 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

### Cobalt Speech and Language

*Speech scientist (intern)*

remote

Apr 2018 - Nov 2018

- Improved model accuracy from 76% to 94% for autonomous drone recognition of air traffic control speech, using class-based (Thrax) language models

## EDUCATION

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### Brigham Young University

*B.S., Mathematics; Applied and Computational Mathematics Emphasis*

Provo, UT

Dec 2019

- Cum Laude (**3.9 GPA**); minor in computer science; concentration in linguistics
- **Senior project:** scored 76% accuracy on phoneme classification of the TIMIT corpus (research-style paper [here](#))
- **Grant-funded research:** used the BYU supercomputer to achieve 71% accuracy on the ZTC morphology corpus (Basque) with a recent VoCRF implementation

## SERVICE

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### Refugee4Refugees

*Volunteer*

Mitilini, Greece

Jul - Aug 2018

- Stood night watch to spot and land refugee boats as they arrived from Turkey
- Taught swimming; cleaned up around Moria camp; organized donated materials

### Church of Jesus Christ of Latter-Day Saints

*Missionary*

Quetzaltenango, Guatemala

Feb 2015 - Feb 2017

- Taught and developed relationships with families all over northwestern Guatemala
- Learned Spanish to an exceptionally fluent level, around a 3+ on the ILR scale

## SKILLS & INTERESTS

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