

# ETHAN NELSON

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## Education

**Brigham Young University-Idaho**

Apr 2021

*BS. Science in Computer Science*

*Rexburg, ID*

### Advanced:

- Python/Machine Learning
- C++

### Competent:

- Keras, TensorFlow, NumPy, Pandas
- KNN, Neural Networks, Clustering, Point Cloud

### Topics studied:

- Machine learning and data mining
- Computer security
- Software engineering

## Work Experience

**Data Reviewer, Annotator**

Feb 2020-Present

*Research & Business Development Center*

*Rexburg, ID*

- Conduct research under a Machine Learning Engineer in order to increase working knowledge on machine learning algorithms specifically dealing with neural networks, semantic segmentation and point cloud classification.
- Build neural network with Point Net and TensorFlow to classify point cloud data to help achieve a fully automated warehouse.
- Correctly apply algorithms to guess point cloud data.
- Contribute to 80,000+ image data set to train machine learning algorithm to maximize efficiency in recognizing barcodes on warehouse shipments.

**Front-End Developer**

Sep 2019- Feb 2020

*House Cleaning Captains*

*Rexburg, ID*

- Built website to increase public exposure of local startup and increased exposure through use of SEO.
- Maintained and updated website to help company maintain a professional appearance as well as allow workers to view/manage appointments.

## Project Experience

**Fault Detection**

Dec2020-Present

*Snow Data Science*

*Houston TX, Rexburg, ID*

- Deepened knowledge on unsupervised machine learning algorithms pertaining to clustering and use of PCA
- Use of data visualization to create readable results

**Image Colorization**

Nov 2019-Dec 2019

*Student Project*

*Rexburg, ID*

- Trained a machine learning algorithm using an 800+ image database.
- Deepened knowledge on Convolutional Neural Networks and image pre-processing by experimenting and researching relevant data.
- Collaborated with team to maximize efficiency in preparing, training and modeling training data to speed up result time.

**EEG Eye-State Data Research**

Jan 2020-Feb 2020

*Personal Project*

*Rexburg, ID*

- Conducted and applied research in order to understand EEG data and how it works with machine learning.
- Built and trained a network that could classify eye state data with a 94.53% accuracy.

## Other Relevant

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### **Amateur Radio Operator (K7INE)**

March 2020 – Present

- Participate in ERC communication channel (Emergency radio communication East Idaho).

### **Volunteer Representative** | *The Church of Jesus Christ of Latter-day Saints*

Feb 2016 – Feb 2018

*London, England*

- Helped others set and plan to meet goals.
- Lead 6 other volunteers- trainings, overseeing statistics, reported status metrics.

### **Won nation-wide youth competition** | [instructables.com](https://www.instructables.com)

Sept 2013

- Used multiple technologies to create a creative home improvement project.
- Project included designing and building a system to toggle lights from bed.
- Use of 3-D printing, Raspberry Pi, Arduino, soldering, plexiglass.