

# ETHAN NELSON

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## Professional Experience

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### Software Engineer

May 2021-Present

ARCTEC Solutions

Middleburg, VA

- Automation of software installation tasks.
- Designing and integrating interactive GUI/ UIX to control automated build processes.
- Modification of existing code to stream data more effectively than natively designed.
- Present research findings to a team or engineers.

### Data Science Intern

Jan 2021-April 2021

Snow Data Science

Houston TX, Rexburg, ID

- Used data visualization to create results that were easily interpreted by humans.
- Researched unsupervised machine learning algorithms pertaining to clustering and use of dimensionality reduction (PCA).

### Data Reviewer, Annotator

Feb 2020-Jan 2021

Research & Business Development Center

Rexburg, ID

- Conducted 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.
- Built neural network with Point Net and TensorFlow to classify point cloud data to help achieve a fully automated warehouse.
- Correctly applied algorithms to classify point cloud data.
- Lead team that contributed to 80,000+ image data set to train machine learning algorithms in recognizing product details.

## Research Projects

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**Fault Detection-** Research on predicting faults in oil pipelines. Use of unsupervised machine learning and dimension reduction to predict and then visualize groupings. Sponsored by [Snow Data Science](#).

**Image Colorization-** Predicted the colored counterpart of grayscale images. Research into different color spaces such as LAB. Applied findings to different use cases such as image compression.

**Point Cloud Classification-** Use of neural networks to predict classification of point cloud images for use in robotic warehouses.

## Technical Experience

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|----------------------|--------------------|-----------------------------------|
| • Python 2.7, 3      | • Computer vision  | • 3D modeling (Autodesk Inventor) |
| • Machine Learning   | • Networking       | • C++                             |
| • Data Visualization | • Microcontrollers | • Agile/ Scrum                    |
| • Tensorflow/ Keras  | • Linux            | • Debugging                       |

## Education

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Brigham Young University-Idaho

BS. Science in Computer Science

Sep 2021

Rexburg, ID