

# Copeland Carter

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## Tools

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### Fluent

- **Python** | pandas, polars, numpy, sympy, PySpark, plotly, Jupyter Notebooks
- **Data/ML** | Databricks, Tensorflow, Streamlit
- **Linux** | Bash, filesystem, installation

### Familiar

- **Hardware** | FPGAs, Verilog, ARM, x86
- **Firmware** | Uboot, UEFIs, FreeRTOS
- **C/C++** | CMake, Qt, C++20, Custom Builds
- **Misc.** | Excel, Matlab, Docker, UI design

## Experience

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### RL Square Packing

### *Custom Machine Learning Environment and Algorithms*

- Designed a custom gym environment from scratch to attempt to solve the Square Packing problem
- Modified a DDGP actor-critic model and attempted to teach it to find a better configuration than the best known configuration for n=11 squares

### EZRegex

### *Published Python Package and Web Frontend*

- Developed *EZRegex* from scratch, a library which greatly simplifies Regular Expression syntax
- Has a web frontend on ezregex.org, which includes a suite of tools to aid in developing Regular Expressions
- Has a fully open-sourced Python package published on PyPI.org

### Temple Predictions

### *Team Data Science & Machine Learning Project*

- Worked with a team over the course of several months to aggregate multiple datasets across several platforms and APIs
- Used ML to predict by county where the next Latter-Day Saint temple will be placed

### NXP LX2160a Platform

### *Embedded SoC*

- Deployed and debugged custom boot firmware and board support package on the NXP LX2160a ARM platform in order to install a mainline Linux/Unix kernel to be used as a desktop computer

### GeoDoodle

### *Custom Drawing Program*

- Developed a desktop application allowing users to create unique patterns on a graph paper-like interface.
- Designed an intuitive front end with features like drawing, repeating, and seamless pattern export.

## Work Experience

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### The Homestead Assisted Living

*Rexburg, ID | April 2019 - September 2022*

- Provided technical support and maintenance services for an assisted living center, successfully maintaining and improving the facility's infrastructure and IT systems over several years
- Had the patience of a saint setting up and teaching elderly residents how to use their technology

### FIRST Robotics Competition

*Meridian, ID | 2013 - 2017*

- Lead the electrical team for two years designing and developing custom electronics, wiring 6 foot tall robots to perform tasks such as shooting balls, and opening doors

## Education

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### Brigham Young University - Idaho (Senior)

*Rexburg, ID | April 2019 - July 2024*

*Bachelor's in Computer Engineering with a Machine Learning Certificate*

- Collaborated with a team to compete in the IEEEExtreme 24-hour coding competition, gaining valuable experience in time management and working under pressure to solve coding challenges