

Robert Cameron McGiffert

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Education

California Polytechnic State University San Luis Obispo

Graduated June 2023

- **Major:** Computer Science, B.S. (major GPA: 3.7)
- **Notable Coursework:** Artificial Intelligence, Data Science, Knowledge Discovery from Data, Computer Security

Employment

Openprise

Software Engineer Intern

June 2022 – May 2023

Led three-member intern team in building a dashboard application for displaying customer data usage trends and metrics by employing knowledge of data engineering.

- Constructed a robust server-side backend via the Micronaut framework, ensuring seamless data transmission from MySQL and Elasticsearch to clients through RESTFUL APIs, integrating ETL strategies for enhanced efficiency.
- Employed Vue.js, Apache ECharts, and the Pinia state management framework to craft dynamic client-side data visualization.
- Ensured data security via OAuth 2.0 and JWT authentication.
- Reviewed peers' code, ensuring quality before approving pull requests.
- Optimized performance and security using a Dockerized Nginx reverse proxy.
- Technology used: Groovy (Micronaut), MySQL, Elasticsearch, TypeScript (Node.js, Vue.js, Vuetify, Pinia, Apache ECharts), Docker, HTML/CSS, Git, OAuth 2.0, JSON web tokens, Nginx

Featured Software Projects

ANNimator™ (in progress): Image generating artificial neural network (ANN)

- Leading an independent project to build a deep-learning model for generating in-between images given two key frames.
- Experimenting with various architecture designs, including U-Nets and Variational Autoencoders (VAEs), while leveraging knowledge of convolutional networks and skip connections.
- Using a GPU cloud computing environment via Google Colab to expedite model training and optimization processes.
- Optimizing hyperparameters to enhance the machine learning model's performance and convergence.
- Creating an extensive custom dataset from scratch using C# and the Unity engine, generating hundreds of thousands of unique image-sets to ensure a robust and consistent training process
- Technology used: Python (PyTorch, OpenCV), Jupyter Notebook (Google Colab), C# (Unity Engine)

Ethereum Price Prediction Model (eth-predictor-google-colab.herokuapp.com)

- Leveraged historical data from NASDAQ and S&P 500 to train polynomial regression models, employing data forecasting and timeseries analysis techniques for precise predictions of upcoming pricing trends.
- Developed stacked linear regression and k-nearest neighbors model for Ethereum price predictions based on stock forecasts.
- Showcased expertise in machine learning, statistical analysis, and data manipulation.
- Technology used: Python (scikit-learn, pandas, NumPy), Jupyter Notebook (Google Colab)

Pixlerr.io (pixlerr-io.herokuapp.com): Collaborative pixel-art canvas

- Developed project using Agile methodology, leading team of three other students in implementing key features and deciding on biweekly sprint objectives.
- Created a backend server with Express.js to store the current canvas state and immediately communicate changes to all clients through a WebSocket connection to allow for easy online art collaboration.
- Built client-side pixel canvas using React.js.
- Technology used: JavaScript (Node.js, React.js, Express.js, Socket.io), MongoDB, HTML/CSS, Git, Heroku

Skills

- **Proficient:** Python, JavaScript, Node.js, C/C++, Java, Git
- **Familiar:** MySQL, Elasticsearch, C#, Groovy, HTML/CSS, Shell scripting, Docker