

# Emily R. Robinson

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## EDUCATION

**Cornell University, College of Arts & Sciences** | *B.A. Computer Science*

August 2019 - May 2023

*Related Courses:* Foundations of AI, Practicum in AI, Practical Tools for Operations Research, Machine Learning and Data Science, Intro to ML, Theory of Algorithms, Data-Driven Web Applications, Data Structures and Functional Programming, OO Programming and Data Structures, Discrete Structures and Logic, Engineering Statistics, Intro to Operating Systems, Unix Tools and Scripting, Foundations in Leadership

**Online Courses:** Intro to MongoDB (LinkedIn), Intro to Deep Learning (Kaggle), Intro to SQL (Kaggle), Advanced SQL (Kaggle – Presently), Intermediate Machine Learning (Kaggle – Presently), R Essential Training (LinkedIn – Presently)

## TECHNICAL SKILLS

**Programming Languages:** Python (Advanced), Java (Advanced), SQL (Advanced), R (Intermediate), C (Intermediate), C# (Intermediate), C++ (Intermediate)

**Data Analysis, Visualization, Machine Learning:** TensorFlow (Advanced), Keras (Advanced), Pandas (Advanced), NumPy (Advanced), Matplotlib (Advanced), D3 (Advanced), Qualtrics (Advanced), Excel (Intermediate), Sci-kit Learn (Intermediate), SciPy (Intermediate), Statsmodels (Intermediate), MongoDB (Intermediate), SQLite (Intermediate), Firebase (Intermediate), Microsoft Access (Intermediate), MySQL (Intermediate), Tableau (Intermediate), Google Cloud (Intermediate)

**Web Development and Scripting:** HTML5/CSS3 (Advanced), JavaScript/TypeScript (Advanced), React (Advanced), Bootstrap (Advanced), REST API (Intermediate), Flask (Intermediate), Tailwind (Intermediate), XML (Intermediate), Bash Scripting (Intermediate)

## WORK EXPERIENCE

**Technical Support Lead** | *C R Market Surveys (Contract)*

January 2021 – Present

- Spearhead the company's website, utilizing **Google Analytics** to improve website traffic, currently achieving a 30% increase.
- Manage and clean a 20,000+ respondent database using **Microsoft Access** and **Excel**, in addition to programming and analyzing consumer surveys using **Qualtrics** and **Momentive** software.
- Analyze UX research data related to website and app measurement.
- Enhance and maintain the company's technical hardware used for data collection; includes computers, tablets, and mobile devices.

**Statistics and Math Tutor** | *Sylvan Learning (Part-time)*

October 2023 – Present

- Support 30+ students per week, ranging from elementary to 12th grade.
- Assist with math assignments, tutoring in Calculus and **Statistics**.
- Deliver session reports to supervisors and parents, aiding in the placement of students within Sylvan programs and learning levels.
- Develop rapport with students and establishes a fun learning environment. Maintain a positive attitude and demonstrate enthusiasm for teaching.

**Data Analyst** | *C R Market Surveys (Contract)*

October 2023 – December 2023

- Designed an AI model for analysis on diverse focus group transcripts, capturing perspectives on distinct health products to strengthen assertions in C R Market Survey's Center for Disease Control project report.
- Utilized AI to analyze positive and negative sentiment from research participants and used insights for qualitative report writing, contributing more than 40% of the statistical figures used in the report through calculations derived from the AI model.
- Accelerated the final report completion timeline three weeks ahead of schedule through the integration of an AI model and Otter.ai for automated transcript generation.
- Performed occasional quantitative and qualitative data analysis for general issues for C R Market Surveys using **R** and **Python**, utilizing Python libraries **NumPy**, **Pandas**, and **TensorFlow** for AI model development.

**Windows System Developer Contractor** | *NetWeaver (Contract)*

September 2023 – October 2023

- Created a bootable USB for automated Windows 10 installation with custom software on 15 computers.
- Developed 2 **batch script** files for automatic software installations upon initial user login.
- Programmed an unattended installation file in **XML** to create multiple users and execute first login commands.
- Edited the Windows 10 image using Deployment and Image Tools Environment (DISM).

**Software Developer Intern** | *Pairup*

May 2022 – August 2022

- Developed a **React** web app with a dynamic bar graph using Uber's react-vis library, providing essential mentor-mentee pairing insights.
- Created a separate React web app to analyze user data using **SQL** queries to the company's user database in **Google Cloud**, resulting in 45% improvements in user engagement analysis.
- Utilized **TypeScript**, **JavaScript**, and **JSX** in the development of both applications.

- Conducted weekly in-person group sessions, providing guidance to 50+ students in test preparation and coding assignments.
- Facilitated students' understanding of programming concepts through interactive **Python** coding demonstrations and practical exercises.
- Addressed Python coding questions on the Ed Discussion platform per week.
- Graded student assignments and exams on Gradescope, offering feedback, which helped students' scores, maintaining effective communication with students and staff via email and Slack.

## DEVELOPMENT PROJECTS

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### Time-Tracker App

June 2023 – Present

- Develop a full-stack web application that helps users manage their time and enhance productivity through efficient task tracking.
- Create the application using **React** and **Typescript** with a **Firebase** user database.
- Utilize Firebase Authentication and create **REST APIs** with **Python Flask**.
- Leverage the React Router library for seamless navigation between different pages.
- Employ Post CSS and Tailwind for streamlined **CSS** development, resulting in improved code efficiency and maintainability.

### Restaurant Recommendation AI

January 2023 – May 2023

- Led a three-person **Agile** team in the development of an AI system coded in **Python** that delivers personalized restaurant recommendations.
- Implemented a user input feature to capture restaurant preferences and used the data to query the **Yelp API**.
- Utilized **TensorFlow** to train a **neural network** on labeled review data, calculating the likelihood of positive reviews.
- Calculated total normalized review and rating scores for each restaurant, applying **Principal Component Analysis** for weight assignment.
- Created a scoring function that combined the weighted scores to assign a comprehensive evaluation for a given restaurant.
- Presented the top-N recommendations based on restaurants' scores.
- Managed seamless collaboration, overseeing project progress, coordinating tasks, and generating detailed project reports.

### GDP Map

September 2022 – October 2022

- Directed a three-person **Agile** team in designing data visualizations of GDP and life expectancy data using **JavaScript** and the **D3** library.
- Developed over 5 functions to filter, clean, format, and parse data.
- Created an interactive choropleth map with a hover feature that displays the selected country's GDP, life expectancy, and population.
- Facilitated project completion by leading 30+ team meetings and preparing 3 project reports with quantitative and qualitative insights.

### Computer Vision

August 2022

- Developed and defined the **Convolutional Neural Network** (CNN) architecture using **TensorFlow** and its **Keras** sub-library.
- Preprocessed and augmented the image dataset to improve model performance and robustness.
- Trained the CNN on the dataset of facial images, achieving a classification accuracy of over 95%.
- Fine-tuned hyperparameters and conducted experiments to improve model generalization and performance.
- Implemented data validation techniques to prevent overfitting and improve the model's reliability.
- Collaborated with a team of two to brainstorm ideas, share insights, and fine-tune the model's performance.

### Optimal Number of Nurses

April 2022

- Developed a model that determines the optimal number of nurses for Cornell's Covid quarantine and isolation team.
- Conducted data analysis and visualization using **Python** with **NumPy**, **Matplotlib**, and **Pandas**.
- Coded functions to calculate the probability of testing positive and simulate diverse student population scenarios with varying Covid testing positivity rates.
- Calculated and visualized the number of overage and underage nurses based on simulated data.
- Created a cost-minimizing function for optimal nurse staffing based on overage and underage values.

### Sales Data Visualizations

March 2022

- Created sales data visualizations using **Tableau**.
- Designed a zip code-based sales volume map and conducted in-depth geospatial analysis to uncover underlying patterns.
- Generated a detailed customer information map, including city, customer ID, order type, and order counts.
- Utilized SQL for data aggregation and sorting, strengthening the analysis of sales data.