

# Carrie (Jiayi) Lei

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## Education

### University of California, Davis

GPA: 3.66

*Bachelor of Science in Applied Mathematics with a Minor in Computer Science*

*Jun. 2019*

Relevant Coursework:

Applied Linear Algebra

Numerical Analysis

Math for Data Analytics

Data Structure and Programming

Computer Vision

Algorithm Design

Optimization

Object-Oriented Programming

Financial Management

Principle of Statistics

Financial Accounting

Management Accounting

## Work Experience

### • AP Computer Science Teaching Assistant

Fremont

*IvyMax*

*Sep. 2019 - Present*

- Create scenarios to test students' Java code to ensure the correctness of the code and debug code for students.
- Explain basic computer science concepts in ways that are easy for students to understand.

### • Hospital Corpsman, Petty Officer 3rd Class

United State

*The United States Navy Reserve*

*Jan 2017 - Present*

- Conduct preliminary physical examinations and provide emergency medical treatment.
- Communicate with medical providers and patients to provide professional medical assistance.

### • Math Lecture Note Reader and Editor

Davis, CA

*UC Davis Math Department*

*July. 2019 - Oct. 2019*

- Proofread lecture notes for class "Math for Data Analytics and Decision Making" in order to publish.
- Clarify and explain ambiguous content in order to make concept easier for students to understand.

### • Math Tutor

Oakland, CA

*Math Lab Tutoring Center, Laney College*

*Jan. 2016 - Dec. 2016*

- Provide private instruction to individuals and small groups of students in order to improve academic performance, occupational skills, and preparation for academic and occupational tests.
- Teach students study skills, note-taking skills, and test-taking strategies.

## Projects

- **Breast Cancer Diagnose:** Diagnose breast cancer by using Support Vector Machines (SVM) to analyze a dataset and build a mathematical model.
- **Predict Survival on Titanic:** Predict survival on the Titanic by using Logistic Regression in Scikit-learn, on a dataset that was cleaned by filling in missing data after analysis. Categorical features were converted by using pandas package.
- **Classify California Census Data:** Predict the income class of individuals from various features using the linear classification method in TensorFlow with an accuracy of 84%.
- **Monopoly:** Implement Monopoly in C++ by using various concepts such as pointers, classes, inheritance etc.
- **Visual Vocabulary:** Build the visual vocabulary by using k-means method to cluster the scale-invariant feature transform (SIFT) descriptors of each images and use these visual vocabularies for image queries for similar content.

## Research Experience

### • Undergraduate Researcher

Davis, CA

*UC Davis Math Department*

*Jan. 2019 - Jun. 2019*

- Design and implement efficient algorithms to solve nonnegative Principal Component Analysis.
- Conduct numerical experiments for different algorithms and analyze the results.

## Skills

### Computer Languages

Python (TensorFlow, Scikit-learn), Java, C++, C, Matlab, ZIMPL, SQL

### Other

git, L<sup>A</sup>T<sub>E</sub>X, Active Secret Security Clearance, Microsoft 365, HIPPA, Enrolled Agent

### Languages

English, Mandarin, Cantonese

## Honors and Awards

- Citation for Outstanding Performance from UC Davis Math Department. 2019
- Deans' Honor List Spring 2018, Winter 2019. 2018 - 2019
- Merit Award from the American Mathematical Association of Two-Year Colleges (AMATYC). 2015