

Nathaniel Kamal

626-988-3477 | nathaniel.kamal13@gmail.com | [linkedin.com/in/nathanielkamal](https://www.linkedin.com/in/nathanielkamal) | github.com/Dossr-NK | Temple City, CA

EDUCATION

California State University, Fullerton – Fullerton, CA

Expected Graduation: May 2025

Bachelor of Science, Computer Science, Minor in Mathematics

GPA: 3.68/4.0

Coursework: OOP, Data Structures, Algorithms, Operating Systems, File Structures and Databases, Differential Equations and Linear Algebra, Statistics, Calculus III, Intro to AI, Software Engineering, Intro to Math Computation

EXPERIENCE

Software Engineering Intern

May 2024 – August 2024

YouTube

San Bruno, CA

- Implemented hotspot throttling features to enhance the automated product infrastructure platform in YouTube with consistency, robustness, and readability
- Utilized **C++** and **Protocol Buffers** for project implementation, learning and utilizing Mustache Templates for code generation automation within 3 months
- Committed over 9300 lines of code changes and authored a technical design document for the project
- Delivered a comprehensive presentation on 7 summer projects to the infrastructure team, highlighting key design elements and implementation strategies

STEP Intern

May 2023 – August 2023

Google

Mountain View, CA

- Implemented 2 full **C++** backend data processing pipelines for text ads and image ads, facilitating seamless ad processing
- Leveraged internal libraries and distributed computation to efficiently query databases and compute ad embedding
- Produced advertiser asset dataset, enabling expedited experimentation and training for machine learning models
- Ensured scalability by testing both pipelines simultaneously and utilizing 100 to 10,000 ads with processing times of 3 minutes to 12 minutes for collections of ads
- Conveyed pipeline creation process in internal design documentation, includes explanation of test cases
- Collaborated with co-intern to complete both pipelines and communicated with other teams to resolve permission issues

PROJECTS [GITHUB]

Chess Bot | *Python, Python Chess* | [Github]

March 2024 – May 2024

- Developed a 1000 ELO chess bot using **Python** with an evaluation function for piece values and positions
- Implemented Alpha-Beta pruning with depth of 3 to optimize move selection, improving decision-making efficiency
- Integrated 3 opening strategies and specialized evaluation for endgame scenarios to improve gameplay adaptability

Bank Management System App | *C, CMake* | [Github]

September 2023 – October 2023

- Implemented an offline user management system in **C** with functions for login, registration, and user management
- Designed an account management system enable a user to create, delete, and access card data within an account
- Utilized text file I/O to store and retrieve user data, ensuring information is saved between program runs

Tic-Tac-Toe | *Java, Java Swing* | [Github]

August 2022 – December 2022

- Developed a **Java**-based Tic Tac Toe game with modular logic components for enhanced functionality
- Crafted an intuitive user interface deploying **Java Swing** to ensure smooth player interaction
- Applied OOP principles to construct a structured, maintainable, and extensible design for the Tic Tac Toe game

Calculator | *Java* | [Github]

June 2022 – July 2022

- Orchestrated development of a calculator to execute a total of 17 mathematical equations
- Structured code to efficiently iterate through an array of switch cases to invoke each equation
- Conducted testing with 5 test cases to verify stability and reliability of code

TECHNICAL SKILLS

Languages: C/C++ | Java | \LaTeX | Python | R | SQL

Frameworks: Abseil | Google Test | Java Swing | JUnit

Libraries: Google Mock | Matplotlib | Mustache Templates | Numpy | Protocol Buffers

Developer Tools: Bazel | CMake | Git/GitHub | Gradle | Maven