ALEX C. ZAHARIA

alex.zaharia4777@gmail.com | (425) 615-2944
https://alexzaharia.net | https://github.com/zahaale20 | https://www.linkedin.com/in/alexczaharia

EDUCATION

California Polytechnic State University - San Luis Obispo (Cal Poly) **September 2020 - June 2024**
Bachelor of Science in Computer Science, Dean's List, Major GPA: 3.1

Universidad Carlos III - Madrid, Spain **September 2022 - December 2022**
Study Abroad, Fall 2022, GPA: 3.6

SKILLS

Programming: C, Java, Python, Swift, Git, Unix, HTML, CSS, Javascript, React, APIs, RISC-V, ARM, LC3

Data: scikit-learn, SQL, Apache Spark, RDD, Apache Hadoop, MapReduce, Firebase, Pandas, R

Languages: English (Fluent), Romanian (Fluent), Spanish (Intermediate)

EXPERIENCE

Computer Science Tutor at Grade Potential **June 2023 - Present**

- Demonstrating leadership, adaptability, and interpersonal skills by mentoring students to reach their academic computer science goals
- Designing lesson plans, study materials, and hands-on projects tailored to individual students' needs and learning styles, focusing on Java and Python, data analysis in SQL, Pandas, and R, and hardware

Software Engineer Intern at 206 Realty **June 2022 - August 2022**

- Developed a Python tool for aggregating and analyzing client data, generating data driven recommendations for prioritizing client leads
- Integrated and pre-processed data from internal databases and Excel sheets to find potential clients
- Designed a prioritization algorithm that ranked client leads based on conversion likelihood

Blockchain Project Manager **April 2020 - August 2021**

- Successfully launched an NFT collection on Cardano and a BEP-20 token on Binance Smart Chain, achieving a $110,000 valuation
- Led a team of eight, conducting competitor and risk analysis, and ensuring streamlined project execution

LEADERSHIP & COMMUNITY ENGAGEMENT

Member at Cal Poly App Development Club **2023-2024**
Member at Cal Poly Entrepreneurial Club **2020-2022**
Vice-President at Skyline Engineering Club **2019-2020**
Member at Spartabots Robotics (FRC 2976, FIRST World Champions) **2018**
Founder/Volunteer at Forgotten Faces Foundation **2016-2020**
Mentor at Athletes for Kids **2018-2020**

SOFTWARE ENGINEERING PROJECTS

GridIron GPT **September 2023 - Present**

- Full stack react development using React, OpenAI, SQL, Firebase, Sportsdata.io API
- Implemented user authentication and real-time data synchronization using Firebase
- Leveraging the OpenAI API to build a dynamic search engine for football data in a SQL database
- Researching and creating tools to enhance user engagement and functionality, such as a lineup optimizer, player projections, and odds predictions for fantasy football
- Compiling extensive football schedules, standings, and stats to deliver a complete and informative user experience

Haggle **January 2024 - June 2024**

- Full stack React development utilizing Agile Sprint processes on a team of 5 to create a student-oriented online marketplace
- Created user stories, personas, UML diagrams, and Figma prototypes
- Developed and maintained Supabase database
- Implemented unit testing with Jest, TDD, and managed CI/CD pipelines for Azure deployment

- Handled user authentication (login, sign-up, password management) and OAuth integration
- Integrated TalkJS for chat feature (chat rooms and inbox)
- Collaborated with teammates through peer programming to overcome various challenges
- Maintained comprehensive documentation for development and deployment processes

MACHINE LEARNING PROJECTS

Predictive Modeling Tool for Real Estate Prices (In the USA) **June 2024**

- Created a predictive modeling tool for U.S. home prices using various machine learning models
- Performed data preprocessing and exploratory data analysis to enhance model accuracy
- Evaluated multiple models to identify the best techniques for real estate price prediction

Exploratory Data Analysis for Insurance Policyholder Data **May 2024**

- Preprocessed and cleaned the dataset by handling missing values and ensuring data integrity
- Visualized distributions and relationships using histograms, box plots, and count plots
- Performed chi-square tests and correlation analysis to determine the significance and relationships between features

Document Retrieval System **April 2024**

- Implemented text preprocessing to tokenize, clean, and remove stop words from the document collection and queries
- Computed TF-IDF scores and cosine similarity to retrieve the top relevant documents for user queries
- Integrated and tested the system to ensure accurate and efficient document retrieval

DATA-ORIENTED PROJECTS

Jamba Juice Database Model **February 2024 - April 2024**

- Outlined information needs, designed a SQL database schema for Jamba Juice, created an Entity/Relationship UML model and transformed it into SQL DDL
- Enhanced database integrity through schema refinement, lossless decomposition, and constraint preservation based on functional dependencies
- Leveraged Java Persistence API (JPA) for object-relational mapping to MySQL and writing queries

2023 Fantasy Football Quarterback Analysis **June 2023 - August 2023**

- Developed ETL processes using Apache Spark, Dataframes, and SQL to analyze over 114,000 lines of weekly NFL player data from 1990 to 2022
- Created data pipelines to evaluate quarterbacks' fantasy football production, individual performance considering team dynamics, and to categorize quarterbacks in a tier list

OPERATING SYSTEMS PROJECTS

Tiny File System **June 2024**

- Implemented a TinyFS file system using linked lists to manage data with features like timestamps, file renaming, and directory listing
- Enhanced user interaction and system utility while maintaining a reliable, bug-free performance within the defined scope of the project
- Conducted thorough testing to ensure accurate file operations, including opening, closing, reading, writing, and renaming files

Memory Simulator **May 2024**

- Implemented a software-based memory management unit (MMU) in Python, simulating page replacement algorithms like FIFO, LRU, and Optimal
- Developed a system to translate logical to physical addresses, handling page faults and TLB hits with a simulated physical memory and TLB
- Enabled dynamic testing with command-line parameters for reference sequences, frame numbers, and page replacement algorithms, calculating and displaying memory access statistics

Threading Library/Lightweight Processes **April 2024**

- Developed a C API for creating and managing threads using a round-robin scheduler, allocating memory for each thread's stack and managing control transitions
- Implemented thread stack setup and context management, including registers and stack pointers, ensuring efficient execution and switching
- Included features like thread creation, termination, yielding control, and scheduler integration, providing a robust and versatile threading library