

# Zhihao Du

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## Education

### University of California, Berkeley

M.Anlytx (Analytics), Artificial Intelligence Concentration

B.A. Computer Science, Statistics - GPA: 3.8/4.0

Berkeley, CA

08/2023 - 05/2024

08/2019 - 05/2023

## Experiences

### Sky9 Capital

San Francisco, CA

Software Engineer Part Time

08/2023 - Present

(Sky9 Capital is an AI-specialized venture capitalist firm with engineering teams crafting state-of-the-art AI technologies)

- Deployed multi-tiered AI-native bots on Discord using Python, AWS EC2, and Docker, catering to 500K combined users
- Designed product data's collection pipeline and performed A/B Testing, finetuning and RLHF on open-source LLMs
- Articulated technical challenges and proposed solutions during product-level discussion sessions, demonstrated adeptness in addressing ambiguous problems by contributing insights on new feature feasibility

Software Engineer Intern

06/2023 - 08/2023

- Developed AI generative agents using Langchain with distributed computing techniques to simulate human-like interactions
- Optimized memory retrieval and prompt chaining algorithms for dialogue generation by 40% through prompt engineering

### University of California, Berkeley

Berkeley, CA

Software Researcher, Project AEI (Artificial Emotional Intelligence)

01/2022 - 05/2023

- Leveraged distributed computing resources on the MS Azure platform to implement and optimize the Conformer neural network with PyTorch, achieving accurate emotion classification from real-time audio speech data
- Improved model performance by 3% with innovative speech augmentation techniques using librosa and torchaudio
- Installed real-time audio streaming and continuous model evaluation on a Raspberry Pi 4 device with optimized sampling and batching technique to overcome the platform's resource constraints

Teaching Assistant, CS182: Deep Neural Networks

01/2023 - 05/2023

- Led, facilitated and supported students on weekly discussion sections, homework parties, and project office hours
- Built and distributed a interactive demo on BERT using Jupyter Notebook through designing a surrogate task that quickly showcased the effectiveness of pretraining on BERT with self-supervised learning

### DataCVG Co Ltd

Remote; Shanghai, China

Data Engineer Intern

05/2022 - 08/2022; 05/2021 - 08/2021

- Performed extract-transform-load (ETL) on client FosunPharma's two major relational database, resolved conflicts with hand designed schemas, and consolidated all data into a single database
- Programmed 100+ complex SQL query scripts and engineered data merger pipelines using the DBeaver ETL software
- Overcame data confidentiality through extensive communication with client representatives and increased client's database system throughput by 80%, benefiting downstream business intelligence tasks

## Technical Projects

### Howamidoing (Gradescope Inspired EdTech Web Application)

01/2023 - 05/2023

- Designed a college level course grade tracker and class standing estimator web application using the Flask framework, HTML, CSS, and JavaScript, in addition to the truncated normal probability distribution to model student grades;
- Implemented and optimized JSONizable user data objects and stored in NoSQL database with connection to MongoDB;
- Utilized the g variable to store the user object for easy I/O accross multiple different requests;

### ImageBoxer (Image Editing Desktop Application)

03/2023 - 04/2023

- Designed an image editing WPF application using the MVVM architecture and the .NET framework using C# and XAML;
- Implemented image redacting, resizing, colorizing, loading and saving functionalities through object oriented design;
- Achieved cross platform deployment on windows, macos and linux runtime systems using the Avalonia UI framework.

## Skills

Languages – Python, Java, C++, SQL, R, C#, HTML+CSS.

Tools/Frameworks – Python Frameworks: [Numpy/Pandas, Matplotlib, Scikitlearn, Pytorch/Jax, Flask, LangChain], AWS / MS Azure, Docker, MySQL Database, MongoDB, .NET, DBeaver, Git, Unix System, Microsoft Office.

Skills – Artificial Intelligence, Full Stack Development, Object Oriented Programming, Data Analysis, Data Engineering, Product Design, Communication.