

Ethan Chen

www.blue-mirror.com · www.github.com/ethanchen143
Urbana, IL · 217-200-2324

EXPERIENCE

Midwest AI Solution

AI Developer Intern

Jun. 2024 - Dec. 2024

- Implemented an AI chatbot for client company (Nutra, as seen on Shark Tank) to save cost and boost quarterly sales by 15%.
- Developed an automatic affiliation outreach system that sends personalized emails to Nutra's affiliates and responds accordingly. Increased outreach response rate by 100%, boosted conversion rate, and reduced marketing cost.
- Utilized vector embedding database for prompt engineering and reduced ChatGPT API cost by 80%.
- Implemented web scrapers for e-commerce and social media sites to power our chatbot demo to potential clients in real time.
- Attended business conferences like IMTS and IFT in Chicago and successfully pitched to multiple clients in different industries.

Click #15

Music Producer and Creative Director

Apr. 2020 - Dec. 2023

- Led creative direction and production for the funk album "April 26th" in 2021, coordinating efforts between musicians, songwriters and engineers. The project achieved over 20 million total streams.
- Performed at multiple music festivals and variety shows. Toured as a performer in 20 cities in China for thousands of fans.

PROJECTS

Algophony (Class Project, Generative AI)

ML Researcher

Jan. 2024 - May 2024

- AI music generation platform using deep learning models (CVAE and GAN)
- Produced a large training dataset of over 500GB audio spectrograms labeled by pre-trained classification models.
- Implemented a CVAE generation model with PyTorch and a HiFi-GAN model for high-fidelity audio conversion.
- Led a cross-functional team of web developers and data scientists, held weekly programming sessions and code reviews.

Hot or Not (ML)

- Web service that analyzes and predicts user uploaded song as a "hit song."
- Scraped data for thousands of TikTok hits and unpopular songs, produced more than 70 features with various tools and Essentia models for each data point.
- Utilized and fine-tuned an ensemble of classification models including Random Forest, Xgboost, and CatBoost to achieve 91% precision and 0.68 F1 score on the testing set.
- Developed a Streamlit app to visualize and analyze the distribution of hit songs and compare the user uploaded song.

Reinforced Poker (RL)

- AI Poker Bot trained with reinforcement (Q) learning and able to consistently beat honest bots and average players.
- Simulated 15 million games to train the bot and reduced training time 30-fold by running critical components in Cython.
- Deployed the bot to play against human players online using jQuery and continuously improve its strategy.

Genrify (ML)

- Web service that lets Spotify users organize their liked songs into themed playlists.
- Utilized the Spotify API to retrieve user liked songs and song data and stored the data in Redis database.
- Implemented K-means clustering to group similar songs into playlists.

Bubble Synth (React, Javascript)

- Web-based, interactive music generator that creates evolving landscapes.
- Innovated a unique synthesizer interface where the user drops a bouncing bubble to generate/modulate sound, by tracking the bubble's location on the x axis and updating note/sound/effect accordingly.
- Utilized Tone.js as the sound engine and efficiently managed React hooks to avoid latencies caused by real time processing.

SKILLS

Python, C/C++, Javascript, Scala, PyTorch, Tensorflow, SQL, React, Docker, AWS, Streamlit, Swift, Flask,
Django, jQuery, Node.js, Agile, CI/CD

EDUCATION

University of Illinois at Urbana Champaign

Bachelor of Science in Computer Science + Music

Sep. 2021 - Present

Coursework: Applied Machine Learning, Database System, Deep Learning for Computer Visual, Computer System, Music and Computation, Data Structure, Algorithms and Models. **GPA:** 3.72