Zhe Chen

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Education

University of Michigan, Ann Arbor **Augt 2020 - May 2024**

Bachelor of Science in Computer Science & Data Science GPA: 3.85/4.00

- Honors/**Awards:** 6 terms University Honors, James B. Angell Scholar
- Course **Highlights:** Web Development, Machine Learning, Building Data-Driven Applications, Data Structures and Algorithm

Experience

University of Michigan School of Environment and Sustainability

Web Developer ***May 2023 - Present***

- Designed and built a scalable and reliable web app backend infrastructure with databases and server nodes on AWS-EC2 that serves over 1,000 concurrent requests with 0 downtimes.
- Implemented a resilient data processing framework using R Shiny and React to perform real-time analysis on user inputs and provide instant feedback and data visualizations with an average latency of 50 ms.
- Conducted thorough performance testing and A/B testing to optimize website responsiveness and improve user experience during the migration from local R Studio deployment to AWS, followed by dockerization for integration with the USA NPN platform.

University of Michigan School of Public Health

Process Improvement Data Analyst ***Oct 2022 - May 2023***

- Developed a robust database system using SQLite and Microsoft Access and collaborated with cross-functional teams to optimize the storage and query efficiency based on data requirements of course registration information for over 80,000 users.
- Designed and developed automated data ETL pipelines in Python and reduced data processing latency from 2 days to 10 minutes.
- Customized the learning management system (LMS) interface and integrated Qualtrics survey into Canvas, improving user experience and analysis efficiency of the course evaluation infrastructure.

Multidisciplinary Design Program - FLASH Parking

Student Software Engineer ***Sep 2022 - Jan 2023***

- Trained transcript-based audio sentiment classification models using NRCLex to achieve 65% accuracy on self-recorded voices and AI-generated texts; and created linguistics-based audio sentiment analysis model with 0.6 AUC on Ryerson audio datasets.
- Designed, and developed a multi-modal solution for video sentiment classification by integrating facial expression recognition models with audio sentiment analysis, achieving an average of 0.75 AUC on validation datasets.
- Developed and optimized the data transformation and model inference pipeline to enable real-time video sentiment analysis on local FLASH's kiosks within 5-10s of customer interactions.

Projects

Classified Ad Web Application Development - https://czhe.pythonanywhere.com/ads/ ***Sep 2022 - Mar 2023***

- Designed and developed a full-stack web application for classified ad listing using Django and MySQL databases.
- Developed an OAuth login integration workflow with GitHub to enhance the security and user experience of the application.
- Implemented various backend features, including image upload, the comment system, and "favoriting" functionality to enhance user engagement and interactivity on the platform.

"Battling Imposter Syndrome" - Google Software Product Sprint ***Jun 2022 - Aug 2022***

- Built a scalable web application to provide customized guidance for target users with imposter syndrome using Google Cloud Platform APIs, including App Engine, Natural Language, and Datastore.
- Implemented full-stack solutions for responsive web services using Java, JavaScript, HTML, and CSS to deliver tailored support and assistance to customers.

Skills

- **Programming Languages:** C++, Python, Java, SQL, JavaScript, HTML, CSS, Docker, MATLAB, R Studio
- **Frameworks:** Django, Node.js, React.js, GCP, AWS