

# ERIC ZHU

SOFTWARE ENGINEER

## CONTACT INFORMATION

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## EDUCATION

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Bachelor of Computer Science (Artificial Intelligence) Oct 2022  
University of New South Wales, Sydney  
Treasurer of PCSoc, Lead Data Scientist of Redback Racing and Dev Lead at Enactus

## EXPERIENCE

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NotesCast | [notescast.com](https://notescast.com) | Software Engineer Aug 2023 - Present

- Creating a better way to discover and review key insights from the best technology, wellbeing and business podcasts
- Transcribes RSS feeds for podcasts using an ASR (Automatic Speech Recognition) model
- Extracts key insights from transcripts using GPT with progressive density prompting and embedded into Pinecone VectorDB with sliding window chunks using ada-002 and SPLADE-V2 for dense-sparse hybrid vector search
- GPT chat feature uses HyDE (Hypothetical document embeddings) to modify the user's question or query, which is embedded for dot product similarity search with Pinecone for RAG (Retrieval Augmented Generation)
- Implemented cross encoder reranker into RAG that improved query hit rate by 4% to 91%

National Australia Bank, Sydney | Software Engineer Intern Jan 2022 - Feb 2023

- Developed a new feature in Java and Spring for the New Payments Platform with 2 people to enable inbound PayID payments for businesses and performed handover for feature deployment into production
- Resolved a Confluent Kafka connector bug in Java that resulted in a 3% of transactions failing to process and a bug that caused duplicate messages
- Automated testing procedures using Python and Jenkins, resulting in an 8% improvement in QA efficiency

University of Sydney, Sydney | Research Engineer Nov 2021 - Apr 2022

- Implemented the FLOSS algorithm for detecting anomalous contextual changes in streaming sensor data
- Developed a website using Gatsby, Emotion and Contentful for the showcase of research results

MAPFRE Insurance, Shanghai | Software Engineer Intern Nov 2019 - Feb 2020

- Created a new app using React and Node.js in a team of 4 that resulted in a 18% reduction in incident to response time due to an improved UX and routing algorithm for drivers

## PROJECTS

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Website | [ericfzhu.com](https://ericfzhu.com) | [library.ericfzhu.com](https://library.ericfzhu.com) | [github.com/ericfzhu/website](https://github.com/ericfzhu/website) Sep 2023 - Present

- A creative endeavor and exploration of the mind - Next.js, Tailwind, Framer Motion, and p5.js

## SKILLS

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Programming languages: Python | Java | Javascript | Typescript | C | SQL | React Native  
Frameworks: PyTorch | Tensorflow | React | Next.js | Cypress | Spring | LangChain | Docker | OpenSearch | Firebase  
Databases: PostgreSQL | Pinecone VectorDB | MySQL | RedisDB | MongoDB

## CERTIFICATIONS

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AWS Certified Cloud Practitioner, Microsoft Certified: Azure AI Fundamentals