

# Eric Zhu

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Recent computer science graduate from UNSW focused on building beautiful backend and machine learning systems using Python, Java, and TypeScript. I'm currently working on NotesCast, a site that offers condensed summaries of the best podcasts in business, technology, and health, allowing users to discover and learn from the best in the world in minutes. I'm also a scholar of philosophy, financial markets, and design, where I explore how principles from other disciplines can inform and inspire my work.

## Experience

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**NotesCast**, Sydney, Australia Jul 2023 - Present  
Founder, Software Engineer

- Automatic Speech Recognition and Large Language Models are used alongside various prompting techniques, such as Chain-of-Density, to transform podcast audio files into summaries
- Generated data is embedded in sliding windows to power Alexandria, a Retrieval Augmented Generation agent that allows users to query for industry-specific knowledge, as well as a recommendation engine for users to discover related content
- User authentication is handled via Firebase, while the other server features including RAG is deployed to AWS EC2
- v0.1 launched in Dec 2023 with roughly 300 MAUs, and currently working on improving summary text quality and response accuracy for Alexandria for a v1 release

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

- Delivered robust production features for the New Payments Platform using Java, Spring, and Jenkins on AWS under an Agile software development model.
- Shipped a business critical feature that enabled businesses to process inbound transactions using PayID, which had a projected revenue impact of 3-5 million per annum
- Triaged and fixed a backpressure performance bug in Kafka, where payment transactions would occasionally during high-traffic loads, helping the system achieve 5,000 transaction messages per second
- Improved deployment and testing CI/CD pipelines using Python, Jenkins, and Terraform, resulting in an 8% increase in QA efficiency

**The University of Sydney**, Sydney, Australia Nov 2021 - Apr 2022  
Research Engineer

- Contributed to the design of a Fast Low-cost Online Semantic Segmentation model for detecting anomalous contextual changes in streaming sensor data
- Responsible for designing and implementing a website using Gatsby and Contentful CMS for the research project

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

- Collaborated with a senior engineer to create a new mobile app using Vue.js and Node.js, which resulted in a 18% reduction in incident response time using an optimised routing algorithm

## Education

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**University of New South Wales** 2022  
Bachelor of Science, Computer Science (Artificial Intelligence)

## Skills

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**Languages:** Python, Java, TypeScript, JavaScript, HTML, CSS, C, SQL, Solidity, React Native

**Libraries:** PyTorch, React, Next.js, Gatsby, Vue.js, Spring, LangChain, Scipy, Terraform, Kubernetes, Framer Motion  
**Databases:** PostgreSQL, PineconeDB, MySQL, MongoDB, SQLite, DynamoDB, Redis  
**Platforms:** Notion, Figma, Canva, Runway ML, Excel, SAP, AWS, Firebase

## Works | <https://ericfzhu.com/works>

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**"WEBSITE"** | [github.com/ericfzhu/website](https://github.com/ericfzhu/website) | <http://ericfzhu.com/>

- A canvas where code is the paintbrush
- TypeScript, Next.js, Framer Motion, and p5.js

**Imitator** | [github.com/ericfzhu/imitator](https://github.com/ericfzhu/imitator)

- Image-to-image translation using ResNeXt-based GAN
- Python, PyTorch, GAN

**Palette** | <https://github.com/ericfzhu/palette> | <https://palette.ericfzhu.com/>

- Colour generator using Stable Diffusion XL
- TypeScript, Next.js, Stable Diffusion

**Codex** | <https://github.com/ericfzhu/codex> | <https://codex.ericfzhu.com/>

- On the memetic nature of knowledge
- Next.js, Three.js, and PineconeDB

## Certifications

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AWS Certified Cloud Practitioner  
Microsoft Certified: Azure AI Fundamentals  
WIP: AWS Certified Developer Associate

## Volunteer

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**Enactus**, Sydney, Australia  
Software Engineer

Dec 2021 - Apr 2022

- Developed EnAccess Maps, a mobile app for disadvantaged individuals to find and review wheelchair accessible restaurants, using React Native and OpenStreetMap
- Built the backend of the CirCex, a platform that enables charity op-shops to easily catalogue their items for an online database

**UNSW Redback Racing**, Sydney, Australia  
Data Scientist

Sep 2021 - Apr 2022

- Developed machine learning models to predict vehicle design parameters and optimise the performance of the next generation Formula SAE vehicle
- Architected a data pipeline to simulate custom vehicle designs using Assetto Corsa and analyse the results using Python on Jupyter Notebooks and Kedro

## Currently Reading and Reflections on Literature | <https://ericfzhu.com/library>

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**Scattered Minds: The Origins and Healing of Attention Deficit Disorder:** Gabor Maté  
**Troubled: A Memoir of Foster Care, Family, and Social Class:** Rob Henderson