

Nathan Yin

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Objective

My dream is to destroy poverty within my lifetime. I want to reduce inequality in our society. I've learnt to be hard-working, creative and industrious from working on my own startup idea full-time whilst attending UNSW. I'm a full-stack web engineer. This means, I've worked on all components of the web development system architecture. I like to host my own websites.

Education

Bachelor of Computer Science (Databases) | University of New South Wales

February 2020 – Present

Final Year Student. Expected Graduation: November 2023.

Projects

Teaser: Reverse Engineered Tiktok <https://teasersfw.com>

February 2023-Present

I reverse engineered Tiktok using React Native and Django as a solo developer. I worked full-time on this startup whilst attending university. <https://github.com/Yinnerston/Teaser>

- Independently research the best system architecture based on my own manpower, experience and future scalability. I interviewed dozens of potential users to gather a set of requirements, transforming the requirements to an Agile Inception Deck with corresponding epics/user stories on Jira.
- I formulated best practices for application development such as isolating business logic in a service layer after running custom sanitization and validation routines. I implemented REST API design best practices like health checks, versioning, pagination, and ISO8601 UTC dates as standardisation for future contributors. This greatly improved both the predictability and readability of my code, allowing me more efficiently switch between frontend Javascript and backend Python between sprints.
- I implemented a mobile video editor, full-text search with a custom search vector and an infinitely scrolling video feed. I also implemented a token-based authentication scheme, comments on posts using a closure table, and user profiles. I gained experience validating forms and managing server state in interactive applications with React Query.
- I implemented performance optimizations such as optimal database index usage and denormalization and applied them to the relevant data, then validated with PostgreSQL EXPLAIN ANALYZE. I read textbooks to identify anti-patterns in my data models, and aggressively cached API responses and React components.
- I learnt a system for how to write documentation for future contributors. I combined technical diagramming with written documentation. I open sourced the project which gave me perspective on how to explain systems to new contributors. You can read the documentation here: <https://yinnerston.github.io/Teaser/>
- Implemented monitoring of docker container, application and cache database metrics through Prometheus + Grafana dashboards. Implemented Exception logging with Sentry.
- Created partitioning and horizontal scalability strategy for the Django application and PostgreSQL on cloud providers.
- Android Play Store Link: <https://play.google.com/store/apps/details?id=com.yinnerston.teaser>
- Related Skills:** Javascript, Python, React Native (Expo, React Query, Jotai), Django (Django Ninja, Swagger), PostgreSQL, Docker, Prometheus, Grafana, Redis, Nginx, Local deployments on Ubuntu Mermaid, FFMPEG

Check out my [Github](#) for some other projects like [Memefeed](#), [Stream Data Processing](#), or [Google Cloud Data Pipeline](#).

Experience

University of Western Australia | Online

Casual 2020-2022

Research Assistant / University of Western Australia Law School

Modeled data for seminar slides using the Microsoft Office Suite for Professor Rick Krever and Peter Mellor.

Activities

Yessoku Band 2023 | Sydney. Lead Guitarist and vocalist.

DSAi Hackathon 2023 | Sydney, UTS Startups. Team project using LlamaIndex and scraped tweets + HTML to make ChatGPT embeddings to predict BHP stock price sentiment.

UNSW CSE Hackathon 2022 | Sydney, UNSW. Team project using Docker, React, and Google API calls to create a chrome extension that displays related search terms to highlighted text.