

Nathan Yin

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Objective

I like to think hard about problems and research solutions as a software engineer. I'm a full-stack developer who can pick up any language. I don't have an ego because I've toiled on my own projects and realized how much effort it takes to become a great engineer. I'm always present, and I've demonstrated to myself how to use hard work to achieve great things.

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://teasersnfw.com>

February 2023-Present

I reverse engineered Tiktok using React Native and Django as a solo developer. <https://github.com/Yinnerston/Teaser>

- 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.
- Implemented REST API design best practices like health checks, versioning, pagination, and ISO8601 UTC dates.
- Implemented atomic design in React Native and how to write more performant react with callbacks and memos
- Implemented Django application design best practices through isolating business logic in a service layer after running custom sanitization and validation routines. This greatly improved both the predictability and readability of my code, allowing me more efficiently switch between frontend Javascript and backend Python between sprints.
- Learnt about optimal database index usage and applied them to the relevant data, then validated with EXPLAIN ANALYZE. Additionally, I implemented full-text search in Django with a custom search vector.
- Created normalized ER models with Mermaid and identified areas where performance improvements could be extracted through denormalization, indexes and identifying SQL anti-patterns.
- 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.
- I'm working on deploying this project to AWS Lightsail after researching cloud providers based on bandwidth costs.
- **Related Skills:** Javascript, Python, React Native (Expo, React Query, Jotai), Django (Django Ninja, Swagger), PostgreSQL, Docker, Prometheus, Grafana, Redis, Nginx, Cloud Deployments (AWS Lightsail), Mermaid, FFMPEG

Memefeed: <https://github.com/Yinnerston/memefeed>

December 2022-February 2023

Solo developer on a dockerised Django web application allowing for multi-attribute search on Reddit submissions.

- Scheduled daily cronjob ETL script using the PRAW Reddit API wrapper to pull top submissions into my application
- Reduced average page load times by 20x through implementing per-page caching with redis and Django ORM optimizations
- Deployed the site locally on a ubuntu machine using a Nginx web server and the gunicorn WSGI HTTP server
- **Related Skills:** HTML, CSS, Python, Django, PostgreSQL, Docker, Redis, Nginx, Git, Jira, Ubuntu

Check out my [Github](#) for some other projects like [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.

Bushcare Volunteer 2019 | Sydney, Hornsby Shire Council.