

Paarth Bhasin

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EDUCATION

Masters of Computer Engineering, *University of New South Wales - Distinction, WAM: 71.0* 2019 - 2022
(Part-time)
Bachelor of Software Engineering, *Monash University* 2014 - 2018

SKILLS

Backend	Java, Python, Go, Node, S3, Protobuf, GraphQL, SQL, DynamoDB, MongoDB, NoSQL
Systems & Networking	Linux, Docker, Websockets, gRPC, Spark, Nginx, AWS, Redis, WireShark, Kubernetes
Frontend	React.js, Redux, JS/TypeScript, CSS, HTML, React Relay, Cypress, Jest, Bootstrap

EXPERIENCE

Senior Front End Engineer - Full Stack (Financial, Rewards & Accounting) Nov 2024 - Present
Big WX (<https://bigw.com.au>) *Sydney, NSW*

- E-commerce feature design and development, responsible for the order checkout, rewards/discounts, campaigns and loyalty card features on the website as well as the back-end. This is used by thousands of customers on a daily basis.
- Increasing test coverage of various user walkthrough scenarios in front-end, following TDD in TypeScript, using **Jest**, **Cypress**.
- Enhanced observability and monitoring tooling, at production level for the front-end by utilizing **OpenTelemetry** coupled with Sentry to capture relevant traces.
- Working with **TypeScript**, **Kubernetes**, **GraphQL**, **Material UI / Shadcn**, **Node.js**, **C#**, **Java**, **React-native/Swift**, **CSS/SCSS** & **Azure** to develop features related to digital customer rewards / loyalty cards. This involves improving business reporting requirements (financial reconciliation and accounting), critical bug-fixes as well as UX/UI improvements, and end to end testing improvements.

Full Stack Engineer Jun 2024 - Nov 2024
Evermed (<https://evermed.com.au>) *Sydney, NSW*

- Part of a 4 person startup, empowering customers across Australia, effectively acting in the capacity of tech lead.
- Rollout of new e-commerce web & back-end features, optimizing existing features, reducing tech-debt and improving operations in a fast-paced environment., with lots of pair-programming.
- Working with **AWS**, **Python**, **C#/.NET**, **CSS**, **Node.js**, **React.js**, **Material UI**, **Nginx** for full-stack application development. Introduced test based approach cloud-infra and front-end applications, outlining testing strategy. Also performed user experience research.

Research Engineer - Front End / AI Apr 2024 - Jun 2024
MapAI (<https://mapai.net>) *Sydney, NSW*

- Project funded by New South Wales Government, working as part of a university initiated research project.
- Full stack application design with best-practices for geo-spatial analysis tools working with Data Scientists, Researchers & Business Leaders. Building well designed user-interfaces to cater to the need of general audience. Working with **Python**, **Node.js**, **React.js**, **Deck.gl/Material UI**, **Architectural / Design Patterns**, **Docker**, **Redis**, **Nginx**, **PostGIS** & **LLM** (Large language model) training using **OpenAI** & **LangChain** to provide geo-spatial searching, ranking & predictions.
- This also involved running the machine learning model on a personalized high powered GPU machine provisioned by the university, which was configured to be accessible by the Internet through AWS VPC public IP.

Senior Software Engineer Jan 2019 - Mar 2024
Atlassian *Sydney, NSW*

▷ Senior Software Engineer / SRE - Jira Cloud Performance

Jan 2023 - Mar 2024

Atlassian (*Key achievements*)

Sydney, NSW

- Led initiative for performance optimization of a widely used user-facing endpoint serving millions of customers, by *algorithm redesign* & **SQL** query optimisation, improving endpoint latency by 50% on average, eg **91s → 35s**. This also involved filtering non-performant endpoints by using long term data storage via **AWS Kinesis** streams, to increase monitoring / observability of under-performant endpoints. This involved lots of collaboration and pair-programming across different geographies.
- Led improvement of database observability/capacity analysis - key metrics & optimising traffic/load distribution across multiple regions/data-centers.
- Drove **OpenTelemetry** adoption in Jira in **Java**, to adopt observability best-practices and for improving the tracing footprint. This involved evaluation of third-party tools as well such as **Grafana**, **NewRelic**, **Honeycomb.io**, **Prometheus**. This also involved *open source* contributions to OpenTelemetry's Java framework.
- Mentored junior engineers, to improve their working dynamics in a globally distributed team environment.
- Led an initiative to improve resiliency of database towards cluster fail-over, requiring OS level programming related with **JDBC** database driver and **TCP/IP** layer network optimization to reduce time to recover (TTR), for (**Aurora**) across the fleet in multiple regions/data-centers. This reduced TTR from 30-60m to 45-60s on average and <1s for best case scenarios.
- Devised testing framework for **performance analysis** of large customers in production coming to cloud, for multiple feature teams, playing key role in unblocking the migration of large customers (like Equifax - 50k+ users) to adopt our cloud services. This developed an underpinning strategy and principles for reliability, performance and scale testing strategy to conduct such testing for entire Jira Development organisation, in various geographies (~1500-2000 Developers).

▷ Software Engineer (SRE) - Enterprise Cloud

Jan 2022 - Dec 2022

Atlassian (*Key achievements*)

Sydney, NSW

- Led the design and delivery of a large-scale runbook automation framework, using **Apache Airflow** (ETL Pipeline). This also involved **AWS Step Functions**, **AWS S3** & **AWS Lambda** to build automated workflows.
- Developed a UI, used for monitoring, tracing & management of deployments for synthetic tests, using **GraphQL** (using **Graphene** based **Python** GraphQL server), **React Relay** & **TypeScript**. It is used by 50+ engineering teams (>1000 developers), internally relying on a **Terraform** provider plugin, written in **Golang** & **Celery/SQS** (Python) based deployment service, that were feature-led by me. The plugin, allows a custom **Terraform** resource to be created and work with internal services, to allow **IaC** (Infrastructure as Code) for in-house developed tools.
- Improved Jira request tracing architecture, by incorporating tracing at the **Nginx** proxy level & changes on various critical request entry paths, ensuring consistency amongst all incoming requests & also did a *brown-bag*.

▷ Software Engineer, Site Reliability Engineering

Jan 2019 - Dec 2021

Atlassian (*Key achievements*)

Sydney, NSW

- Feature led improvement of async job framework (**Event Driven Architecture**) - introduced robust *health-checks* for Jira, including algorithm to detect false positives - by incorporating threshold for success & failure in **Java**, new key performance monitoring metrics for *scheduled asynchronous jobs*. Also delivered auto-scaling of instances based on discrete queue sizes.
- Developed automation (**Python**) for auto-scaling of **WebServer** (**AWS EC2**), in response to high tomcat thread loads in Jira.
- Managed all aspects of **CI/CD** pipelines - containerisation, deployments, and configuration as code in **Terraform**. This involved large scale scripting in **Terraform**, using best-practices like modules, remote state management, variables, version-management (**tfenv**), loops/counters.
- Built and managed a on-premise instance of **Sentry** being used by hundreds of developers internally, with SAML and appropriately scaled stack achieved by load testing through **Gatling**.

Junior Software Engineer - Full Stack

June 2018 - Dec 2018

Odece, A Cognizant Digital Business

Melbourne, VIC

- Full Stack Developer for development of an e-commerce website and back-end tests. Worked in an Agile Scrum team of 5, having fortnightly sprints and gained experience in Agile. Used **React.js**, **Redux** & **Spring MVC/Data**.

PROJECTS

LockR: Open-source Python Plugin for concurrency management

Jun 2022 - Dec 2022

- An open-source Python package, providing concurrency management of applications in the cloud with **Redis**, using *Redis Locking Pattern*. It can be accessed on [PyPI](#). It is used by multiple organisations and students.

Optiver Realized Volatility Prediction: Machine Learning Model

Jun 2021 - Aug 2021

- A Machine Learning Model (LSTM), which helps with stock prediction. It can be accessed at: [Kaggle](#).

ACHIEVEMENTS & CERTIFICATIONS

- [Tutor Web Front-end Programming \(COMP6080\), UNSW - 2023](#) Imparted regular tutoring sessions to students. Additionally, my contributions to the course led to direct changes in the course framework such as Assignment criteria / updating lecture content, exam question assessments, by directly collaborating with the Lecturer.
- [Learn to Lead, UNSW - 2022](#) Learn to Lead with UNSW is a specially curated short course for UNSW alumni on the topic of leadership.