

Emmanuel Oh

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Experience

Shopee – Software Engineer

Sep 2024 – Present

- Implemented DR codex module to monitor and triage data infrastructure middleware issues and ensure disaster-readiness of company-critical data workflows.
- Expanded OneBI platform capabilities with custom alert templates, support for alternate SQL dialects, adhoc data visualization APIs, snapshots for user-level exploration, and dynamic query acceleration with semantic models.
- Designed and implemented agentic workflows, skills and MCPs for AI-assisted data analysis and asset modification with LangChain Deep Agents
- Enhanced service stability by migrating from unmaintained 3rd-party dependencies, improving resource management and monitoring for compute-intensive tasks, and tuning application parameters with the help of live profiling tools like Arthas and async-profiler.
- Responded to live incidents, resolved user issues, and maintained documentation, guides and API contracts to support the workflows of 8000+ daily active users

Knovel Engineering – Software Engineer

Jan 2024 – Aug 2024

- Prototyped browser extensions for dynamic web scraping with LLMs and remote dispatch of browser tasks with Puppeteer.
- Architected and deployed full-stack applications (LLM chatbot, legal case assessment software) to private and public clouds like AWS and Azure.
- Integrated and benchmarked proprietary and open-source solutions for speech transcription and speaker diarization.

Education

Singapore Management University – BSc Computer Science

Aug 2019 – Jan 2024

- Artificial Intelligence Track
- GPA: 3.7 / 4 (Magna Cum Laude)
- Dean's List: AY2019-2020 (Year 1), AY2020-2021 (Year 2)
- Awarded SCIS (School of Computing and Information Systems) Achievements scholarship.

Projects

Open Source contributions

Jun 2022 – Present

I contribute to open source software that I rely on through issues and discussions and PRs, publish my own personal projects and configs wherever applicable, and maintain references and guides for getting started with programming languages, application frameworks, and developer tooling.

CoastalClear ([GitHub](#) , [feature](#) , [media coverage](#))

May 2024 – Jul 2024

Web application that integrates historical data and live feedback with an interactive map interface for efficient and coordinated cleanups in coastal areas. Selected as finalist among 19 teams with \$20,000 funding and further development in an 8-week accelerator programme.

ScamSword

Feb 2023 – May 2023

Prototyped proof-of-concepts for scam-prevention measures in collaboration with Open Government Products (OGP). Features include site inspection tool which analyzes page components like URL, DOM, and favicon to generate a comprehensive risk report, and chat proxy which facilitates anonymous chat sessions with scammers through Telegram APIs.

SourC-VM ([GitHub](#))

Feb 2023 – May 2023

Compiler and virtual machine that targets a subset of the C programming language. Supports compilation errors, type-checking, conditionals, loops, and debugger visualizations for the stack and heap.

Activities

Better.SG – Volunteer

Aug 2022 – Dec 2024

- Provided tech helpdesk and consulting services for nonprofits looking to improve digital workflows.

Singapore Management University – Teaching Roles

Jan 2021 – Dec 2023

- TA for Linear Algebra, Object-Oriented Programming, Computer Hardware and Embedded Systems, and DevOps modules.
- Composed practice and review materials to prepare juniors for major programming lab tests.

Skills

Languages: English, Mandarin

Programming: Python, Java, JavaScript, SQL,

Frontend (*HTML, CSS, Bootstrap, React*), Backend (*Spring, FastAPI, Django, ExpressJS, ASP.NET, RabbitMQ, Redis*), Databases (*MySQL, PostgreSQL, MongoDB, DynamoDB*), Big Data (*Kafka, Hadoop, Presto, ClickHouse*), Cloud & Infrastructure (*AWS, Azure, GCP, Docker, Kubernetes, CloudFormation, Terraform*), DevOps (*Gitlab CI, Jenkins, Grafana, Prometheus*), Data Science & ML (*Pandas, Numpy, Jupyter, Plotly, PyTorch, TensorFlow*), Tooling (*Git, Bash, Powershell, Linux/UNIX*)