

Professional Summary

I'm a software engineer with a track record of rapidly transforming innovative ideas into scalable, impactful business solutions—taking an unconventional leap directly from Polytechnic graduate to enterprise engineering leadership at ByteDance and Pixium Digital. I architect robust backend systems on ByteDance's aPaaS platform, empowering over **180,000 global users** with reliable, cost-effective, and high-performance applications. At Pixium Digital, my drive for technical excellence led to strategic concurrency enhancements, boosting critical web application throughput by **62.5%**, while my expertise in **Terraform and Docker** dramatically streamlined infrastructure automation—reducing deployment initialisation by **80%**. Currently at ByteDance, I leverage distributed microservice architectures and sophisticated **Redis caching** techniques to achieve remarkable cost savings of approximately **67%** compared to traditional development approaches. Continuously evolving, I'm certified in **Machine Learning (MIT-IDSS)** and will soon begin my **part-time BIT degree at NUS**, underscoring my relentless curiosity and lifelong commitment to learning. I excel at bridging software engineering, cloud infrastructure automation (**AWS, Terraform, Docker**), DevOps methodologies, and cross-functional team leadership—positioned to confidently deliver innovative, resilient, and impactful software solutions to tackle complex business challenges.

Experience

Software Engineer, Project Manager — ByteDance

December 2023 - Present

- Architect and deliver scalable aPaaS solutions** on ByteDance's internal Feishu App Engine, using **Node.js, Go, and Redis**, providing robust support for mission-critical enterprise applications (HR, finance, insurance, legal) with a user base exceeding **180,000 employees** in China
- Drive requirement analysis and system design**, serving as a critical liaison between business stakeholders and technical teams; translating complex business requirements into clearly-defined, scalable software solutions (e.g., Human Capital Management (HCM), legal workflows, operational automation)
- Design and deploy high-performance backend services** leveraging distributed architecture principles and **Redis-based caching**, achieving substantial latency reductions and enhanced stability for large-scale transactional operations
- Pioneer reusable low-code modules and frameworks**, facilitating rapid feature rollout, seamless integration, and substantial efficiency gains across internal projects, significantly accelerating project delivery timelines
- Optimise operational workflows and reduce manual interventions**, implementing innovative low-code solutions that achieved project delivery at nearly **one-third of traditional software development costs**, fostering an environment of agile innovation and significant cost-efficiency
- Lead internal training and knowledge-sharing initiatives**, mentoring junior engineers and promoting best practices in low-code development, technical architecture, and software engineering excellence, directly improving overall team effectiveness and project delivery timeliness

Full Stack Software Engineer, Tech Lead — Pixium Digital

March 2021 - December 2023

- Led full-stack projects** in Elixir/Phoenix, JS/TS/React, PHP/Yii2 applications
- Automated deployment pipelines using Terraform**, accelerating delivery timelines (80% faster initialisation)
- Orchestrated a Docker-based environment**, leveraging PHP, Nginx & PostgreSQL to achieve operational excellence
- Architected advanced data structures and schemas to ensure high levels of data integrity and operational efficiency
- Optimised MySQL and PostgreSQL queries, achieving a 62.5% boost in a complex analytics dashboard speed
- Crafted comprehensive technical documentation and user guides, benefiting both internal teams and the clients
- Achieved an 80% client satisfaction rate, leading to consistently successful deliveries and securing repeat contracts
- Managed User Acceptance Testing (UAT) protocols to align products with client specs and quality benchmarks
- Mentored junior engineers, focusing on the best coding practices and enhancing their contributions to projects

Full Stack Software Engineer Intern — Pixium Digital

September 2020 - February 2021

- Engineered robust web and mobile applications** in a Docker-optimised setting, resulting in a measurable improvement in system efficiency and contributing to client retention for recurring contracts
- Actively collaborated with teammates on a Flutter-based mobile application** and shared responsibilities in both mobile development and backend API integration, collectively exceeding client expectations
- Authored, executed, and rigorously tested UAT protocols and API test cases, effectively serving as the quality assurance agent to confirm alignment with client specifications and maintain high product quality
- Produced and updated technical documentation, enhancing project efficiency and team collaboration
- Designed efficient data structures and model diagrams to ensure data integrity in relational application schemas
- Deployed and managed scalable WordPress sites leveraging Docker for modular infrastructure benefits
- Acquired and honed project management skills, adapting to agile methodologies and client interactions

Education

Bachelor of Information Technology — National University of Singapore

July 2025 - 2030

- Upcoming academic advancement highlighting continued investment in deepening my technical foundation

Diploma in Information Technology — Singapore Polytechnic

April 2018 - May 2021

- Specialised in **UI/UX Design** and **Data Structures & Algorithms**, building strong foundations for software engineering
- Delivered a **Java-based full-stack final-year project** for Sentosa Development Corporation in a collaborative five-member team
- Created promotional design assets as an active SP Arts Council member, enhancing event engagement using Adobe Illustrator and Photoshop
- Recognised consistently as a standout performer with SP Vocal Talents, achieving multiple awards at local and international competitions

Projects

Elixir — Phoenix Framework

- Revolutionised a client's workflow by engineering an advanced file management system with a nuanced search algorithm ([AWS Textract integration, Levenshtein & Lemmatisation](#)), achieving a complete shift from manual to automated processes and leading to a 80% productivity boost
- Developed and scaled a responsive web application with an integrated [RESTful API](#), utilising product identification API, [FFmpeg](#) and [ImageMagick](#), resulting in a 60% efficiency increase in business operations
- [Architected a comprehensive internal company platform](#), encompassing performance reviews, leave and remote work scheduling, sales pipelines, and room booking utilities. Seamlessly integrated a [WhatsApp bot](#) and an internal activity dashboard, collectively boosting organisational efficiency and streamlining employee workflows
- Streamlined the [room booking process](#) for a top-ranked engineering university in Asia by architecting a responsive and intuitive system, resulting in a marked elevation of user efficiency and user satisfaction rates

PHP — Yii2 Framework

- Innovated a multi-faceted web platform amalgamating [messaging, friendships, and payments](#), thereby enhancing user interaction and financial transactions within the ecosystem
- Conceived and executed a robust training platform with dynamic [scheduling and traceable lesson logistics](#), substantially improving training efficiency and oversight capabilities
- Pioneered a cutting-edge digital dashboard that provides [real-time data analytics](#), specifically focused on agricultural operations like farm analytics, leading to informed decision-making for stakeholders
- Engineered and launched a game engine featuring seamless [Zoom integration](#), winning significant client acclaim

TypeScript

- Designed and developed a [real-time web-based game](#) using [TypeScript](#) and [Socket.IO](#), significantly boosting organisational cohesion and promoting team collaboration

Dart — Flutter

- Orchestrated a comprehensive mobile application centered around farmers, seamlessly integrating task management with [IoT-enabled animal health analytics](#), thereby revolutionising agricultural practices
- Conceived and launched an engaging sports prediction mobile application in [Dart \(Flutter\)](#), leading to a remarkable 50% increase in user adoption and engagement rates within a short timeframe

Java - Academic Projects

- Digital Service and Incentive Platform for Sentosa Development Corporation (SDC)
- Spearheaded the full-stack development of a multi-role digital platform using Java and NetBeans IDE
- Architected a user management dashboard with CRUD functionalities, enhancing administrative workflows
- Implemented a dynamic announcement and notification system to facilitate seamless communication
- Engineered a point-based incentive system with feedback mechanism for improvement and user engagement
- Amplified user experience through the inclusion of web-based mini-games and a rewarding redemption feature

Certifications and Awards

Data Science and Machine Learning: Making Data-Driven Decisions - MIT Schwarzman College of Computing January 2024

Completed an advanced course on [Data Science and Machine Learning](#), focusing on transforming complex datasets into actionable insights. This certification highlights my ability to leverage machine learning techniques to make data-driven decisions, essential for optimising business processes
Credential ID: PYCYNIRT

3rd Place in Final Year Project: Digital Service and Incentive Platform - Sentosa Development Corporation (SDC) January 2018

[Achieved 3rd place](#) for a project that was recognised among the top 10 in the Singapore Polytechnic 2018 cohort. This project involved designing a comprehensive digital platform for the company, effectively demonstrating my expertise in requirement gathering, leadership, and the delivery of innovative solutions in a competitive environment

Skills

- **Programming Languages:** Python, Elixir, JavaScript, Bash, TypeScript, Dart, Kotlin, Java, PHP
- **Frameworks & Libraries:** Node.js, Phoenix, LiveView, Yii2, React, Flutter, Tailwind CSS, Vue, jQuery
- **Web Technologies:** HTML5, SCSS, CSS
- **Databases & Management:** MySQL, PostgreSQL, Firebase Realtime Database, DynamoDB, MariaDB, TablePlus, MySQL Workbench
- **Infrastructure, DevOps & CI/CD:** AWS, Terraform, Docker, Redis, Grafana, Nginx, Apache, Git, GitHub, Jest, Postman
- **Tools & Data Formats:** Trello, Markdown, JSON, YAML
- **IDEs & Editors:** Vim, Cursor, Trae, Visual Studio Code, Android Studio, NetBeans
- **Operating Systems:** macOS, Linux
- **Other:** FFmpeg, ImageMagick, Figma, AdobeXD, ChatGPT, Doubao, Claude, Gemini