

Professional Summary

I'm a software engineer who took the unconventional path—diving straight from a diploma into real-world engineering, quickly rising from intern to leader, and now crafting solutions for over **180,000 users at ByteDance**. With a relentless passion for technology and innovation, I've spent the past four years building impactful, scalable systems using **JavaScript, Elixir, PHP, Python, Go, and AWS**. At Pixium Digital, I didn't just write code; I elevated user experiences, boosted critical dashboard performance by 62.5%, and automated deployments so efficiently (Terraform & Docker) that initialisation times dropped by 80%. Currently, at ByteDance, I'm architecting large-scale internal aPaaS solutions—using Redis caching and distributed architectures—to significantly lower costs and streamline operations at roughly a third of traditional expenses. I'm committed to never standing still—certified in **Machine Learning from MIT-IDSS** and gearing up for my **part-time BIT at NUS**. My journey reflects a continuous upward trajectory driven by curiosity, resilience, and an unwavering commitment to excellence. I thrive in agile, cross-functional teams, and I'm excited to bring my blend of software engineering, infrastructure automation, DevOps, and innovative problem-solving skills to drive operational excellence and create meaningful, lasting impacts wherever I go.

Experience

Software Engineer, aPaaS Consultant — ByteDance

December 2023 - Present

- **Develop and manage end-to-end solutions** on ByteDance's internal aPaaS platform (Feishu App Engine) using **Node.js and Go**, serving critical enterprise functions including HR, finance, legal, and business insurance, currently supporting over **180,000 internal users**.
- **Lead requirement analysis, solution design, and stakeholder communication**, effectively bridging business units and engineering teams, translating complex business requirements (e.g., HCM, contracts, OA systems) into scalable and robust technical implementations
- **Implement high-performance backend services** leveraging **Redis caching** for significantly reduced latency and improved reliability in large-scale data operations
- **Design reusable low-code components and application frameworks**, facilitating faster feature rollout, streamlined development cycles, and effective code reuse across multiple internal projects
- **Optimise operational efficiency and reduce manual workloads**, achieving project delivery at approximately one-third the cost of traditional software development methods—enabling agile innovation across teams
- **Contribute actively to internal knowledge transfer and trainings**, mentoring peers on low-code best practices, technical solutioning, and scalable system design

Full Stack Software Engineer, Tech Lead — Pixium Digital

March 2021 - December 2023

- Spearheaded web application projects, driving both the strategic direction and hands-on execution
- Developed robust web applications using Elixir, PHP, JS/TS, significantly improving UX and system performance
- 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
- Orchestrated a Docker-based environment, leveraging PHP, Nginx & PostgreSQL to achieve operational excellence
- Automated deployments with Terraform, slashing initialisation times by 80% in a DevOps setting
- 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
- Mentored junior engineers, focusing on the best coding practices and enhancing their contributions to projects
- Managed User Acceptance Testing (UAT) protocols to align products with client specs and quality benchmarks

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

(Upcoming) July 2025 - 2030

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 100% 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:** JavaScript, Python, Bash, TypeScript, Elixir, Java, PHP, Dart, Kotlin
- **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 & Configuration:** Markdown, JSON, YAML, Terraform
- **DevOps & Infrastructure:** AWS, Docker, Nginx, Apache, Firebase, Grafana
- **Version Control & API Tools:** Git, PostMan
- **IDEs & Editors:** Vim, Cursor, Trae, Visual Studio Code, Android Studio, NetBeans
- **Operating Systems:** macOS, Linux
- **Other:** FFmpeg, ImageMagick, Figma, AdobeXD, ChatGPT