

SOFTWARE ENGINEER

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NGUYEN DUC VY

PROFESSIONAL SUMMARY

Software Engineer with a Master of Computer Science and hands-on development experience spanning AI/machine learning, enterprise reporting (SAP ABAP), and end-to-end data pipelines. Comfortable working across the stack with Python, SQL and PostgreSQL, using Git/GitHub for version control and Docker/GCP for reproducible environments.

Strong foundation in software architecture and maintainability, demonstrated by reproducing a peer-reviewed deep learning model as a modular, benchmarked codebase and by building a full SQL-to-dashboard analytics pipeline from scratch. Experienced translating business and stakeholder needs into technical specifications within Agile teams, using Jira and Confluence. Multilingual in English, Vietnamese and Japanese, currently completing an ACS Professional Year in IT, and seeking Junior/Graduate Software Engineer roles in Perth.

KEY SKILLS

- Languages & Frameworks: Python, TypeScript, SQL, ABAP, FastAPI, SQLAlchemy, React, PyTorch.
- Data & Databases: PostgreSQL, relational data modelling, ETL/pipeline design, Power BI/DAX.
- Tools & Platforms: Git/GitHub, Docker/Docker Compose, Nginx, GitHub Actions (CI), AWS (EC2), VS Code, GCP.
- Practices: Agile/Scrum with Jira backlog management, CI pipelines (lint/typecheck/test/build), automated testing (pytest, Vitest/React Testing Library), technical documentation.
- Security Fundamentals: Vulnerability assessment, incident response, digital forensics (Nmap, Metasploit, Wireshark, Splunk).
- Communication: Cross-functional collaboration with developers, data scientists and business stakeholders; multilingual.

KEY ACHIEVEMENTS

- Designed and built a full-stack application (FastAPI + PostgreSQL backend, React/TypeScript frontend) over a 421-site, 356-project resources-sector dataset, containerised with Docker Compose and gated by a GitHub Actions CI pipeline running automated backend (pytest) and frontend (Vitest) test suites on every change.
- Reproduced and extended a peer-reviewed deep learning model (PCB, person re-identification) in PyTorch, achieving 92.87% Rank-1 / 78.54% mAP on Market1501, with a modular codebase and Docker-based reproducible environment.
- Designed and implemented SAP ABAP reports that automated enterprise data workflows, reducing manual effort and improving reporting timeliness.

PROFESSIONAL EXPERIENCE

Software Developer Intern – Spirited Thinking (Access Labs Program)

Perth, WA | Jul 2024 – Nov 2024

- Worked with developers and data scientists on an AI image classification project for client Botlab, analysing image datasets and preparing functional specifications and test cases to guide implementation.
- Clarified technical scope, success metrics and constraints with the delivery team, translating business expectations into buildable requirements.
- Contributed to backlog refinement and defect triage, writing clear, traceable issue descriptions linked to requirements and test cases.

SAP Developer Intern – FPT Information Systems

Ho Chi Minh City, Vietnam | May 2017 – Aug 2017

- Designed and implemented SAP ABAP reports to automate critical data workflows, reducing manual processing and improving reporting timeliness.
- Analysed existing SAP workflows and stakeholder requirements to inform report logic and data structures.
- Collaborated with functional consultants to validate report outputs against business rules, debugging and adjusting logic based on user feedback.

ADDITIONAL EXPERIENCE

- Culinary Assistant – La Cucina, Perth, WA (Mar 2023 – Present); Warehouse Stock Coordinator – 88 Supermarket, Vancouver, Canada (Dec 2021 – Sep 2022); Receptionist – Rang Dong Hotel, Ho Chi Minh City, Vietnam (Jan 2020 – Jun 2020).

PROJECTS

WA Mining Portfolio — Data Pipeline & Full-Stack Application

FastAPI, SQLAlchemy, React, TypeScript, PostgreSQL, Docker, GitHub Actions, Power BI | Personal Project | 2026

- Evolved a SQL/Power BI analytics case study into a full-stack application: a FastAPI + SQLAlchemy REST API (health, sites, kpis, meta, and CSV-export endpoints) over a PostgreSQL-backed dataset of 421 sites across 356 projects, with a React/TypeScript/Vite frontend — a dashboard (clickable breakdown charts, a top-10 LGA view, a multi-site-project panel, a data-provenance footer), a sortable/filterable sites explorer with CSV export, an interactive Leaflet map, site detail pages, and a global command palette (Ctrl/Cmd+K) for jumping to any site.
- Containerised the stack with Docker Compose for local dev and a production-like build (multi-stage frontend build served via nginx, which reverse-proxies the API and handles SPA routing), and set up a GitHub Actions CI pipeline (backend lint, compile check and pytest suite; frontend Vitest suite, typecheck and build) gating every merge to main.
- Authored a step-by-step AWS EC2 deployment runbook for the containerised stack, covering architecture, an explicit cost/billing gate, and launch/configure/verify/teardown steps.
- Replaced an earlier design where the application's seed script re-implemented the SQL cleaning rules by hand in Python with one that runs the actual 5-step SQL pipeline and loads its exported output directly — eliminating a second, hand-maintained implementation rather than just keeping two in sync; the original Power BI dashboard remains available as a reference reporting surface.
- Ran project delivery through a Jira backlog of 41 issues (5 Epics, 19 Stories, 17 Subtasks) across 3 sprints.
- Repository: github.com/tonynguyen1292/WA_Mining

Person Retrieval / Re-Identification Model – Deep Learning Engineering

Python, PyTorch, TensorBoard, Docker, Git | Personal Project | 2024

- Implemented the PCB (Part-based Convolutional Baseline) model for person re-identification, reproducing and extending the approach from "Beyond Part Models: Person Retrieval with Refined Part Pooling."
- Structured the codebase into modular components (bpm, dataset, model, utils, script, resnet50-docker), separating data loading, model architecture, training logic and evaluation to demonstrate maintainable software architecture.
- Trained and evaluated the model on three benchmark ReID datasets (Market1501, DukeMTMC-reID, CUHK03), achieving 92.87%/78.54% Rank-1/mAP on Market1501 and 84.47%/69.94% on DukeMTMC-reID using independent 1x1 convolution layers for part stripes.
- Applied TensorBoard for training visualisation and Docker for environment reproducibility; documented experimental setup, hyperparameters and results in a structured README for other developers to reproduce.
- Repository: github.com/tonynguyen1292/Person-Retrieval

NBCC Diploma of Cybersecurity Capstone – Red vs Blue Simulation

Cybersecurity, Incident Response, Digital Forensics | Capstone Team Project | 2021

- Completed a two-phase capstone simulating offensive (Nmap, Metasploit, Burp Suite, SET, Mimikatz) and defensive (Splunk, Microsoft Defender, Snort, Suricata, Wireshark, Volatility) cybersecurity operations in a team environment.
- Investigated suspicious activity, collected digital evidence and applied forensic techniques to support incident response.
- Documented findings and communicated evidence-based conclusions under time constraints.

EDUCATION

Master of Computer Science

Edith Cowan University, Joondalup, Western Australia | Feb 2023 – Feb 2025

- GPA: 3.458
- Relevant coursework: Systems analysis, database design, project management principles.

Cybersecurity Diploma

New Brunswick Community College, Saint John, New Brunswick, Canada | Sep 2020 – Jun 2021

- GPA: 3.573/4.0
- Relevant coursework: Systems administration and enterprise IT environments, project execution, IT governance.

Bachelor of Computer Science

University of Science, VNU-HCM, Ho Chi Minh City, Vietnam | Oct 2014 – Jan 2020

- GPA: 3.29/4.0
- Relevant coursework: Software engineering, analysis and design, database systems, data structures, technical writing.

PROFESSIONAL DEVELOPMENT

- Entry Certificate in Business Analysis (ECBA), IIBA – issued July 2026.
- ACS Professional Year in IT – in progress (Nov 2025 – present).
- "Step Into SQL with Jupyter Notebooks" – Coursera, issued May 2026.

PORTFOLIO & ARTEFACTS

- GitHub portfolio: github.com/tonynguyen1292 (WA_Mining, Person-Retrieval, Healthcare).
- WA Mining live sprint board (Jira, 41 issues across 3 sprints):
tonynguyen1996jb.atlassian.net/jira/software/projects/WMDP2.