

MINH TRUONG

Software Engineer | Distributed Systems, Backend, Security & Performance

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PROFILE

Software engineer and PhD researcher with 4+ years of experience across backend development, distributed systems, security tooling, data processing, and performance engineering. Current work focuses on key management and performance evaluation for distributed storage systems. Additional work includes financial data pipelines, vulnerability management, software supply chain security, infrastructure tooling, and empirical evaluation of LLM-based developer agents.

CORE SKILLS

Backend & Systems

Go · Python · C#/ .NET · REST APIs · Distributed Systems · Microservices · Linux

Infrastructure & DevOps

Docker · AWS · Proxmox · CI/CD · Git · Deployment Automation · Virtualization

Agent & LLM Systems

MCP · Local Inference · Agent Evaluation · Tool-Use · Benchmarking · Multi-Agent Workflows

Performance Engineering

k6 · Load Testing · Benchmarking · Latency Analysis · Throughput · Scalability Testing

Security & Data

KMS · Cryptography · AEAD · Vulnerability Management · SQL · T-SQL · ETL · Supply Chain Security

Research & Experimentation

Controlled Experiments · Failure Testing · Reproducibility · Performance Analysis

EXPERIENCE

Key Management System & Distributed Systems Performance Engineering

45Drives / University of New Brunswick | Graduate Research Engineer | Aug 2024 - Present

Research and engineering work on key management for distributed storage environments, including reproducible performance and failure evaluation.

- Designed and implemented a centralized KMS supporting key generation, encryption, decryption, and related key-management operations.
- Built functionally equivalent monolithic and microservice variants for controlled architectural comparison.
- Developed a reproducible benchmark harness using open-loop workload generation and automated experiment execution.
- Measured tail latency, throughput, error rates, saturation behaviour, and response under increasing load, component failures, and resource constraints.

Technologies: Go · Docker · Linux · Proxmox · k6 · REST APIs · Microservices · Distributed Systems

Financial Data Processing & Risk Systems

Accso - Accelerated Solutions GmbH | Software Engineer | Feb 2022 - Aug 2024

Development and maintenance of software in a large German banking environment, mainly around capital markets, foreign-exchange data, risk processing, and internal automation.

- Developed and maintained data-processing and ETL components for capital-market and foreign-exchange data.
- Built pipeline components used by downstream risk and credit-analysis systems and integrated multivariable regression models into production workflows.
- Improved reliability and maintainability of existing data-processing components in a regulated environment.

Technologies: C#/ .NET · T-SQL · SQL · Python · ETL · Data Processing

Vulnerability Management & CI/CD Automation

Accso - Accelerated Solutions GmbH | Software Engineer | 2022 - 2024

Internal security tooling and deployment automation for applications spanning multiple language ecosystems.

- Developed tooling for identifying vulnerable third-party dependencies and integrated vulnerability scanning into CI/CD pipelines.
- Automated deployment workflows for development and production environments on AWS.
- Supported GDPR-related work, including improvements to data-handling procedures.

Technologies: Python · TypeScript · React · Docker · AWS · CI/CD · Vulnerability Management

SELECTED PROJECTS & OPEN SOURCE

Ground Control - Provider-Agnostic Hypervisor Control Plane

Requested Engineering Project | 2026

Built an end-to-end hypervisor control-plane prototype to a stakeholder request and successfully handed it off to the requesting organization's R&D team for continued development.

- Integrated Proxmox and Xen Orchestra/XCP-ng behind a provider-independent control layer with inventory, VM lifecycle, snapshots, migration, resource controls, tags, and audit logging.
- Developed a working web interface and clear provider boundaries so additional infrastructure backends could be added without spreading provider-specific logic through the application.

Agent Harness & Local LLM Systems

Independent R&D | 2026

Experimental work on reliability and efficiency of LLM-based software-development agents.

- Built controlled benchmarks covering task success, tool use, routing, execution time, and token consumption across agent configurations.
- In one 25-task evaluation, improved coding-task success from 84% to 96% by refining tool descriptions and system policy.
- Evaluated local inference, specialist delegation, isolated worktrees, and multi-agent workflows under resource constraints.

Technologies: Python · MCP · Local LLM Inference · Agent Tooling · Benchmarking · Multi-Agent Workflows

Specht - Vulnerability Management Platform

Open Source Maintainer

Maintain an open-source vulnerability-management platform spanning scanner ingestion, finding correlation, policy and gate workflows, API contracts, and a web interface.

- Work includes security hardening, parser and remediation reliability, API and frontend evolution, CI/test coverage, and accessibility improvements.

Selected Open Source Contributions

TokenTracker: merged Windows/WSL multi-install aggregation across 11 providers and NixOS/Linux process and port detection.
Serpantinum: merged a Wayland tray/autohide reliability fix.

EDUCATION

PhD in Computer Science | University of New Brunswick, Canada | Aug 2024 - Present

GPA: 4.3/4.3 | Research focus: distributed systems, storage systems, security, and performance evaluation. Member of CAS Atlantic.

MSc in Computer Science | Bonn-Rhein-Sieg University of Applied Sciences, Germany | Mar 2023 - Aug 2024

Final grade: 1.1 (German scale, 1.0 = highest)

BSc in Computer Science | Bonn-Rhein-Sieg University of Applied Sciences, Germany | Oct 2019 - Mar 2023

Final grade: 1.4 (German scale, 1.0 = highest)

PUBLICATIONS & AWARDS

Comparing Client- & Server-Side AEAD Encryption in Software-Defined Storage Systems

IEEE Xplore | Co-author | 2025

Study comparing client-side and server-side AEAD encryption approaches for software-defined storage using Ceph.

ieeexplore.ieee.org/document/11268846

You Can't Touch This: Detecting Typosquatting Packages for Enhanced Malware Prevention in Software Supply Chains

Network and System Security (NSS) / Springer | 2025 | Best Paper Award - NSS 2024

Research on typosquatting detection, package-name similarity, malicious-package datasets, and machine-learning classification. Built a dataset of 394 malicious packages and evaluated classifiers reaching up to 98.4% accuracy in the evaluated datasets.

link.springer.com/chapter/10.1007/978-981-96-3531-3_8

LANGUAGES

German Native	English Fluent	Vietnamese Basic
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