Zhiyang Wang

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CONTACT

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WORK EXPERIENCE

07/11/2022 – 06/05/2023 Beijing, China

Cyber Security Engineer Intern CARIAD China

Built and maintained an automation testing hardware setup on the system level (Raspberry Pi).
Helped colleagues to decrypt the necessary files (AES-GCM) using Python cryptographic libs. Created a TLS proxy server to evaluate the correctness of our TLS in the Connectivity Module within the vehicle. Conducted reverse engineering on our backend and the Connectivity Module for analysis.
Created an automation testing script (MITM based on TLS1.2) for the TLS-PSK protocol to facilitate test automation.

31/08/2022 – 31/10/2022 Beijing, China

Rust Backend Engineer Intern Baihai AI

Proposed, designed, and built a part of the backend API in our AI platform using Rust axum framework and psql.
Applied rust tracing lib and supported OpenTelemetry to enable effective observability.
Tracked and managed project progress on GitLab.

EDUCATION AND TRAINING

04/09/2023 – CURRENT Amsterdam, Netherlands

Master Computer Science University of Amsterdam & Free University Amsterdam

Track: Computer Systems and Infrastructure, GPA: 8.6 (10), Equivalent US Grade (4.0/4.0, A+), UK Grade (First-Class)
Highlights: Storage System (7), Software Containerization (10), Cryptographic Engineering (9.5), Multi-core Processor System (9), Programming Large-scale Parallel System (8.5), Performance of Networked Systems

01/09/2019 – 04/06/2023 Qingdao, China

Bachelor Software Engineering Qingdao University of Science and Technology

28/06/2021 – 30/08/2021

Summer Session Computer Security University of California, Berkeley

PROJECTS

NVMe userspace FTL (GC) and a log-structured NVMe file system for RocksDB

This project is based on libnvme and a simulator (QEMU) configured with two 32Mb NVMe ZNS disks. For the FTL part, we use a log-like structure to manage the address space, dividing it into two parts: the log zone and the data zone. The GC algorithm merges the log zone into the data zone. After implementing the FTL, we designed a log-structured file system (without GC due to limited time) based on the FTL and ensured its consistency.

Link https://github.com/PolymagicYang/zns-fs

K8s Todolist App

A simple to-do list application with persistent storage (psql) deployed on GCP using K8s, secured with TLS via cert-manager and RBAC. It supports multiple update strategies such as canary and rolling updates, managed through Helm charts. I got a 10 (Highest) in this course.

Link https://github.com/PolymagicYang/ContainerCraft-22

AMD64 MOESI Cache Simulator

I implemented an AMD64 MOESI Cache protocol simulator with pipelined Memory (discrete-event with accurate timing in SystemC), and I got the highest grade in this course: 9.

Link https://github.com/PolymagicYang/MOESI/tree/main/src/assignment_3

Microservices Project for Web Data Processing Systems Course

Designed and implemented a microservice architecture comprising six specialized services—Ingestor, LLM (Llama2-7B), Entity Linker, Extractor, Checker (Verifier), and Collector—to efficiently process web data. Configured the system for both scalable and simple operational modes using Docker containers and RabbitMQ for seamless inter-service communication.

A Secure Hardware Implementation

RISC-V Implementations of KATAN32 and RECTANGLE Ciphers, and a Verilog Implementation of the PRESENT Cipher with Masked S-Box.

LANGUAGE SKILLS

MOTHER TONGUE(S): Chinese

OTHER LANGUAGE(S): English (IELTS 6.5)

DIGITAL SKILLS

Python | RISC-V | SystemC | C/C++ | Verilog | K8s | Rust | Docker | GCP | Git | Java | Linux | Knowledge of SQL.