Guochao XIE

hyxgc@hotmail.com | +41-762087445 | https://xieguochao.com/ | Zürich & Lausanne | Available: from April 2024

An Azure-certificated cloud architect with strong programming skills and in-depth knowledge on OS and Linux.

EDUCATION EXPERIENCES

École Polytechnique Fédérale de Lausanne, Mater of Computer Science (Software Systems). GPA: 5.55/6.0.   09/2021 – 03/2024
- Related Courses: Database Systems, Data Visualization (*d3.js*), NLP (*GPT* & *LLM*), Systems for Data Science (*Spark*).

The Chinese University of Hong Kong, Shenzhen, BEng of Computer Science and Engineering.   09/2017 – 07/2021
- Presidential Award for Outstanding Students. Rank: top 1%. GPA: 3.827/4.0.
- Courses: Programming (*Python*, *C++, JAVA*), Database (*MySQL*), Cloud Computing (*AWS*), Blockchain Systems (*Go*).

University of California, Berkeley, Summer Program. GPA: 4.0/4.0. Operating System (*C, Go*), Game Theory.   06/2019 – 08/2019

CERTIFICATIONS

Cloud: Azure Administrator Associate (AZ-104) & Azure Solutions Architect Expert (AZ-305) & OCI Architect Associate (1Z0-1072).
Kubernetes: Certified Kubernetes Administrator (CKA), Certified Kubernetes Security Specialist (CKS).

WORKING EXPERIENCES

Oracle Labs, Research Assistant.   Zürich, Switzerland   09/2023 – 03/2024
- **Context**: A Blackbox approach to generate build provenance for *SBOM, licensing* and *vulnerability audit*.
- Develop a framework of monitoring, *container* management and post-processing using *Python* and *Bash*. Monitor Linux container kernel and user-space events using *eBPF* and *Python BCC*. Build file-level provenance and generate *Software Bill of Materials* for complex build systems mixing multiple frameworks including Java's *Maven* and *Gradle* and Rust's *Cargo*.

Oracle Labs, Research Assistant.   Zürich, Switzerland   07/2022 – 12/2022
- **Context 1**: Composition of *reference architectures* to support multiple *application patterns* on *Oracle Cloud*.
- Design a consistent *Terraform* composition solution using naming convention. Implement *Terraform* code parsing and generation using *Go*. Develop a *Terraform module* "flattening" tool to improve readability and customization using *Go*.
- **Context 2**: Shift-left (plan-phase) visualization and policy support for complex Terraform expressions.
- Design a solution to trace resource dependencies. Implement a *Terraform-core* patch in *Go*. The result outperforms all *plan-phase analysis* tools. Visualize the improved dependency inferring with a *VSCode Extension* using *JavaScript* and *SVG.js*.

Shenzhen Research Institute of Big Data, Software Engineer Intern.   Shenzhen, China   06/2018 – 08/2018
- **Context**: Real-time campus heatmap using Wi-Fi data to help students make better decisions for libraries and restaurants.
- Design and implement a mobile heatmap using *JavaScript* and *Fetch API*, effectively visualize user locations and the crowd density at various sports. Seamlessly integrate it into the WeChat platform, where it has been in service for 5 years.

SELECTED ACADEMIC PROJECT

Linux cgroup Scalability. Robust Scalable Systems Software Lab, EPFL**.**   09/2021 – 06/2022
- **Topic**: Linux cgroup locking contention on *Serverless* concurrent cold-start scenarios.
- Measure and benchmark using *eBPF* and *C++.* Implement Serverless workloads using *Kubernetes*, *KNative*, *Firecracker* (AWS Microvm) and *C++*. Develop a Read-Write lock *Linux kernel patch* in *C* which is scalable on a 224-core server.

SKILLS

- Cloud Providers: Azure, Oracle Cloud Infrastructure, AWS, Cloudflare.
- Frameworks and Runtimes: GitHub Actions, JVM, Serverless, Docker, Podman, Kubernetes, React, Redis.
- Programming Languages: Bash, Terraform, Go, Python, C, C++, Java, JavaScript, SQL, eBPF, Linux kernel.
- Languages: Native: Chinese and Cantonese.   Working proficiency (C1): English.   Elementary: French.