Yong Zhi Tan

yztan2@illinois.edu | +1 (217) 819-0180 | github.com/tanyongzhi | linkedin.com/in/tanyongzhi

EDUCATION

University of Illinois at Urbana-Champaign *May 2022*
B.S. Computer Engineering | Grainger College of Engineering *GPA: 4.0/4.0*

WORK EXPERIENCE

University of Illinois at Urbana-Champaign **Champaign, IL**
Undergraduate Research Assistant | Electrical and Computer Engineering Department *Aug 2020 - Present*
- Developing congestion control algorithms for datacenters, increasing performance and decreasing tail end latency
- Implementing models of high-performance datacenter switches for the ns3 simulator in C++ to accurately emulate and quantify the performance of congestion control algorithms

Government Technology Agency (GovTech) **Singapore**
Software Engineering Intern | National Digital Identity App Team *May 2020 – Aug 2020*
- Developed the backend of Singapore's digital identity system of over 3 million users by building secure certificate-based authentication and digital document signing REST API frameworks with Java and Spring Boot
- Deployed microservices to AWS by maintaining CI/CD pipelines with Docker, K8s, and GoCD, allowing code changes to be automatically tested and seamlessly integrated while maintaining the high availability of services
- Optimized SQL schema for AWS Aurora with indexes and optimistic locking, improving query throughput by 400%

Bayer **Champaign, IL**
Software Engineering Intern | Crop Science *Jan 2020 – Apr 2020*
- Developed interactive training applications for farmers to reduce workplace injuries by building VR planter training simulations for the Oculus Quest using Unity and C#
- Optimized VR workflows to improve user comfort and reduce VR sickness by testing and tweaking the application based on user feedback

University of Illinois at Urbana-Champaign **Champaign, IL**
Course Assistant | Electrical and Computer Engineering Department *Jan 2019 – Dec 2019*
- Mentored 30 engineering students to reinforce engineering concepts and best practices through weekly lab sessions
- Conceptualized final project ideas with students, discussing the project feasibility and technical limitations

PROJECTS

Unix-Like Operating System Kernel *Sep 2019 – Dec 2019*
- Designed and built a Linux based kernel for the x86 processor written in C and x86 Assembly, allowing users to load and run custom programs and applications
- Implemented drivers for the mouse, a high-resolution GUI, inter-process communication, and multitasking to allow users to run concurrent processes seamlessly and intuitively on multiple terminals

Distributed Cryptocurrency *Mar 2020 – Apr 2020*
- Designed a Bitcoin-like cryptocurrency system implementing the Nakamoto Consensus in Python, letting users make decentralized transactions on a synchronized distributed ledger
- Built a gossip-based protocol and proof-of-work based eventual consensus that is resistant to failures and scalable up to 100 nodes at 20 transactions per second, providing high availability to end-users

LEADERSHIP

Singapore Student Association, UIUC – Vice President & Secretary *May 2019 – May 2020*
- Liaised with partner sponsors and government bodies in Singapore to plan Careers@SG, a career networking event for UIUC students to discover career opportunities in Singapore
- Planned food festivals and celebrations to share South East Asian culture with other students on campus

SKILLS

Programming Languages: C, C++, C#, JavaScript, Python, Java
Technologies: SQL, Nodejs, Git, Linux, AWS (RDS, Redis), Spring, Kubernetes, Express, Mongo