He Nan (Tony) Li

University of Waterloo, Class of 2020
Computer Science, Digital Hardware Option

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Qualification

Proficient in C#, JavaScript/TS, Java, C/C++, HTML/CSS, SQL, Objective-C, and Lua.

Extensive experience with Linux, Kubernetes, Docker, Nginx, Amazon Web Service, Azure, testing methodologies, architecture design, microservices design and network security.

Working knowledge in Entity Framework, .Net Core, J2EE Hibernate, Spring MVC, NodeJS, Angular, React, NoSQL and SQL Server.

Acquainted with Git, Agile, SDLC, CI/CD and SOLID programming principles.

Education

University of Waterloo

Excellent Academic Standing: 3.9 GPA

Awards: President's Scholarship of Distinction, Term Dean's Honor's List

Work Experience

Thomson Reuters *Software Engineering Intern* — Jan 2018 – April 2018

- Designed and implemented a **microservice architecture** to migrate on-premise **platform as a service** to **Kubernetes orchestration**.
- Re-platformed existing services to **.Net Core** and **containerized** them with **Docker**. Created configuration files to deploy to a Kubernetes cluster.
- Improved the **server performance** by doubled the **requests handled per second** with **Nginx** as the load balancer. Utilized Openresty to embed business logic that validate HTTP requests with **Lua** scripts in **Nginx.** Deployed Nginx as a **Kubernetes Ingress**.
- **Designed** a CI/CD pipeline **architecture**. Created scripts to **automate** packaging solutions with **Helm Chart**. Rolled out updates with **blue-green deployment strategy** and provisioned new Kubernetes namespaces for integration tests.

BDO Canada LLP *Software Engineering Intern* — May 2017 – Aug 2017

- Designed and implemented **performance-critical** software with **PaaS architecture** using **ASP.NET**, **C#**, **Azure**, and **Angular**. Utilized over 130 SQL databases, **Azure Service Bus** and **Azure Key Vault** to ensure always-on encryption and data independence.
- Improved search efficiency through **memory caching** and **indexing**. Simplified search expression and optimized **LINQ expression**.
- Performed **penetration testing** with SqlMap and ZAP with reference to OWASP Top 10 Projects. Prepared a comprehensive report outlining security vulnerabilities and recommended solutions. Implemented **CSRF attack prevention** with anti-forgery token.
- Prepared extensive design documents detailing **system architecture**, **database schema** and **sequence diagram** that translate business requirements into technical solutions.

Bluejay Network Inc. *Software Engineering Intern* — Aug 2016 – Dec 2016

- Developed a cross-platform mobile application using **Cordova**, **Ionic** and **AngularJS**.
- Implemented a **backward-compatible** RESTful API using **Java EE**, **Hibernate**, **Spring MVC**, and **MySQL**. Investigated server errors and provided hotfixes to the production server.
- Planned, prepared and executed agile sprints and scrums with colleagues to push the project releases within scheduled timeframe.

Projects

KaleidoScope *Content Sharing Application (github.com/AlephTeam/KaleidoScope)* — Aug 2017 – Present

- A cross-platform application designed to simplify content sharing between users.
- Decentralized P2P sharing with encryption. Provide consistent UI and UX across different platforms.
- Built with **NodeJS** and **WebRTC**; hosted on **AWS** with **Elastic Beanstalk**.

ExpressCPP *Cross-platform Server framework built with C/C++ (github.com/AlephTeam/ExpressCPP)* — July 2017 – Aug 2017

- A restful framework with the ability to create **controllers**, **middleware** and custom **error handlers** on a specified port.
- Built with **Winsock2** library for Windows and **socket library** for Unix to achieve cross-platform and consistent interface.

MarkX *A Markup Language Compiler (tonyli.me/markx)* — May 2017 – July 2017

- Implemented in **modularized** and **object-oriented** architecture with **MEAN stack** to provide **extensible** and **maintainable** solution.
- Constructed parsing rules and context-free grammar. Applied **LR1 parsing** to achieve **linear time efficiency**.
- Took the initiative to organize a team of software developers to implement MarkX.