Justin **Cheung**

SOFTWARE ENGINEER

 TODO | TODO | j43cheun.github.io | j43cheun | j43cheun

Technical Skills

Programming	C/C++, C#, PowerShell, Java, Python, Bash
Platforms	Windows, Unix/Linux
Development Tools	Git, WinDbg, VS Code, Visual Studio, Eclipse, Selenium
Web	CSS, HTML, JavaScript, Vue.js, npm

Experience

Microsoft Corporation   *Redmond, WA, USA*

SENIOR SOFTWARE ENGINEER - STORAGE SPACES DEV TEAM   *Sep. 2015 - Present*

- **Granular Repair**: Optimized in-place virtual disk repair (resilvering) on Storage Spaces Direct (S2D) clusters by implementing driver and metadata support for tracking stale data copies at stripe unit granularity (e.g., 256 KiB) vs. extent granularity (e.g., 1 GiB), which led to an order of magnitude reduction in runtimes (e.g., from hours to minutes).
- **Nested Resiliency**: Implemented driver support for deploying and managing virtual disks with node-mirrored mirror and node-mirrored parity resiliency configurations to enable virtual disks to tolerate 1 node + 1 drive failures on 2-node S2D clusters vs. the typical 1 node fault tolerance in order to further reduce the propensity for virtual disk downtime on 2-node S2D clusters.
- **Diskstream**: Implemented a .NET Standard dynamic-link library (DLL) in C# to enable the HoloLens 2 emulator to modify the virtual machine disk image in user mode without requiring the virtual disk image to be mounted on the host operating system.

Internships

IBM Canada Ltd.   *Markham, ON, Canada*

COMPILER OPTIMIZATION DEVELOPER   *Sep. 2014 - Dec. 2014*

- Assisted with implementing an instruction translator for translating LLVM IR to an intermediate representation used by IBM's XL C/C++ compilers.
- Expanded the test coverage for IBM's LLVM IR translator by implementing a program in C++ to impersonate IBM's XL C/C++ compiler test drivers so that existing test buckets for IBM's XL C/C++ compilers could be reused for validating IBM's LLVM IR translator.

Citigroup Inc.   *Mississauga, ON, Canada*

OPERATIONS TECHNOLOGY DEVELOPER   *Sep. 2013 - Dec. 2013*

- Automated an hourly bookkeeping workflow at Citigroup by implementing a small program in Java to scrape financial data from a website using Selenium and format the data to Excel spreadsheets, and deploying this program hourly using Jenkins. This effort ended up saving a bookkeeper over an hour a day otherwise spent entering the data by hand.
- Reduced time cost of validating Citigroup's Global Stock Record (GSR) web app by automating black-box testing using Java and Selenium.
- Provided consultation to other developers to scale GSR's automated black-box test framework for validating other Citigroup web apps.

Nav Canada   *Ottawa, ON, Canada*

SYSTEM SOFTWARE DEVELOPER   *Apr. 2012 - Aug. 2012*

- Assisted with porting an air traffic control software build distribution tool from HP-UX to a Java ICEFaces web app hosted on a Red Hat Linux server.
- Reduced the learning curve and improved quality of life around using the new air traffic control software build distribution tool by automating steps in the build distribution workflow that previously had to be executed manually using the old tool.

Patents

Multilevel Resiliency

KARAN MEHRA, JUSTIN SING TONG CHEUNG, VINOD R. SHANKAR, GRIGORY BORISOVICH LYAKHOVITSKIY   *Oct. 20, 2020*

- Application Number: US 16/389,605. Publication number: US 10809940.

Education

University of Waterloo   *Waterloo, ON, Canada*

BACHELOR OF APPLIED SCIENCE IN COMPUTER ENGINEERING   *Sep. 2010 - Apr. 2015*