

David Justo

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Education

UC San Diego, M.S in Computer Science - GPA 3.75

December 2019

UC San Diego, B.S in Computer Science - GPA 3.65

June 2018

Selected Work Experience

Microsoft, Senior Software Engineer, MSVC C++ runtime libraries *November 2024 to Present*

- Led memory safety improvements in the msvc C++ toolchain by driving the adoption of ASan (i.e. the Address Sanitizer, dynamic analysis for memory safety), leading to novel bugs being identified and later resolved in the msvc compiler while preventing the introduction of new memory safety errors.
- Drove specification conformance improvements in Microsoft's C runtime (i.e. the UCRT), working closely with the Windows org to reduce their dependence on non-standard behavior, and improving the UCRT's compatibility with modern language features like C++ modules.

Microsoft, Senior Software Engineer, Azure Functions *March 2020 to November 2024*

- Led the development and maintenance of the Python, JavaScript/TypeScript and PowerShell Durable Functions SDKs, reducing their record-replay (i.e. durability mechanism) runtime from quadratic to linear complexity.
- Built the control plane for the Flex Consumption plan in the lead up to the public preview announcement, allowing flagship devtools like Terraform, VS Code, and the Azure CLI to safely manage their Azure resources with server-side config validation.
- Mentored 3 college new hires, supporting them through high impact projects across Azure Functions (e.g. the development of a new JavaScript programming model) while emphasizing a growth mindset culture to grow their confidence as engineers.
- With Microsoft Research, I helped productionize Netherite, a high throughput backend for Durable Functions (up to a 38x end to end latency boost in our benchmarks), resulting in a "best of industry papers" award by the VLDB conference in 2024.
- Introduced system and servicing improvements such as: self-healing features through poison message handling and target-based auto-scaling, and the introduction of new app-health metrics and dashboards for common incident types.

Selected Publications

Burckhardt, S., Chandramouli, B., Gillum, C., **Justo, D.**, Kallas, K., McMahon, C., Meiklejohn, C. S., & Zhu, X. **Netherite: Efficient Execution of Serverless Workflows.** (VLDB 22)

Skills, Tools, Frameworks

GENERAL: Python, JavaScript, TypeScript, Node, PowerShell, C++, C, Haskell, LLVM, ASan | **DATA:** Python, Numpy, Pandas, Tensorflow, Pytorch, SciPy | **DATABASES:** SQL, Kusto, MongoDB | **WEB:** HTML, CSS, Node, React | **WORKFLOW:** Design Patterns, Agile, Git, Object Oriented, Functional Programming, Cloud, Azure, SaaS