ETHAN MOFFAT

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TECH SKILLS

Languages: C#, C++, Java, Go, Python, PowerShell, Bash, YAML
Tools: git, CMake, Azure, Docker, Kubernetes, OpenAPI 3.0

EXPERIENCE

SENIOR SOFTWARE ENGINEER – DELL TECHNOLOGIES – APEX CLOUD
JULY 2021 – PRESENT
JAVA, SPRING BOOT, GO, REACT, NODE, TYPESCRIPT, REST, KUBERNETES

Early-Stage Development (ESD) team:

- Designed and implemented software version differencing microservice for new baremetal-as-a-service offer; core of APEX cloud's compute offer.

- Onboarded CSI drivers (Kubernetes) for Powerstore product lines to cloud environment. Allowed for onboarding of customer storage systems to APEX cloud.

- Integrated Cloudify (IaC) and Temporal (distributed workflows) into APEX cloud; part of platform of offerings for cloud development environment.

- Designed Kafka multitenancy approach for APEX Cloud. Implemented proxy interceptor for Kafka binary message format, including decoding messages and mutating data. Part of platform of offerings for cloud development environment.

- Investigated admission control (OPA Gatekeeper) and network policies for APEX Kubernetes clusters. Compared options and recommended an approach to central architecture team.

SOFTWARE ENGINEER II - MICROSOFT – SQL ENTERPRISE
NOVEMBER 2017 – JUNE 2021
C#, GO, C++, PYTHON, BASH, POWERSHELL, LINUX, REST, DOCKER, NOTEBOOKS

SQL Server - Azure Arc (Azure Data) team:

- Designed and implemented cloud-native serverless backend for processing generic data through data ingestion pipeline. Implemented system for ingestion of on-prem SQL Server metadata. Enabled primary feature of new SQL Server - Azure Arc offer.

SQL Server on Linux (Azure Data) team:

- Implemented 'adutil' CLI tool, for configuring Active Directory (AD) auth for SQL Server on Linux. Condensed tedious manual process into a straightforward procedure. Enabled process for containerized SQL server via Juypter notebooks.

- Designed and scaffolded implementation of Windows Server Failover Clusters CLI tool for SQL Server on Linux. Leveraged gRPC API/protocol buffers for configuration.

Microsoft R Release and Infrastructure team:

- Maintained legacy custom build system 'ShipR' responsible for building all Microsoft R products and dependencies. Used Azure ARM, Jenkins, and Azure Pipelines APIs to automate management of VM pools, including setup/teardown, provisioning (via Chef recipes), and build scheduling.

On-call:

- DRI (designated responsible individual) in rotation for custom 'ShipR' build system.
- DRI in rotation for Azure SQL DB authentication, gateway, and security queues.

SOFTWARE ENGINEER - MICRO ENCODER INC (MEI)
JULY 2015 – NOVEMBER 2017 (C#, C++, WPF, POWERSHELL, NUNIT)

MiCAT Planner team:

- Worked at all layers of the software stack to improve and enhance the planner desktop software. Included UI layer in WPF/XAML, database layer using custom ORM system, CAD kernel loading using ACIS, and 3D rendering using TechSoft3D HOOPS.
- Developed "Controller Integration Tests", which allowed for improved testing at the layer directly under the UI by executing a workflow and checking expectations of the domain model. Added more process-oriented test coverage to automate manual testing stages.
- Worked on experimental team using Hololens and Unity to develop a sales demo application for showing measurement equipment in Augmented Reality. Provided demo of experimental solution to company executives.
- Served as a Scrum Master for one of eight globally distributed Scrum teams. Participated and led in global release planning and regular team ceremonies.

SOFTWARE ENGINEER - APPLIED VOICE AND SPEECH TECH. (AVST)
JULY 2014 – MAY 2015 (C++, C#, MFC, MYSQL, SOAP)

Worked at all layers of the software stack to add new voicemail capabilities. Included UI layer in C++/MFC, backend Windows system services leveraging SOAP APIs, telephony protocols, and MySQL database schema.

Fixed various cross-component bugs using multi-process debugging skills.

DEVELOPER/ANALYST - SEATTLE PACIFIC UNIVERSITY (SPU)
FEBRUARY 2014 – JULY 2014 (ORACLE PL/SQL, HTML, CSS, C#, PERL)

Additional information available upon request.

SR. PC SUPPORT TECHNICIAN - SPU
MAY 2011 – FEBRUARY 2014

Provided technical assistance to students and staff. Provided timely emergency troubleshooting to faculty and staff in classrooms, offices, and during on-campus events.

SOFTWARE ENGINEER INTERN - AVST
SUMMER 2012; SUMMER 2013

Additional information available upon request.

PERSONAL PROJECT – ENDLESSCLIENT
https://www.github.com/ethanmoffat/endlessclient

- Open-source implementation of the classic 2D isometric MMORPG "Endless Online", written in C#/MonoGame.

- Project goal is to be a 1:1 reference implementation of the original classic game client, which remains closed source.

- Wrote a custom-designed scripting language and interpreter from scratch.

- For desktop UI, wrote custom event-driven UI controls library (https://www.github.com/ethanmoffat/XNAControls).

- To enable loading Windows-only assets cross-platform, wrote a custom PE resource loader from scratch (https://www.github.com/ethanmoffat/PELoaderLib).

PERSONAL PROJECT – ETHEOS
https://www.github.com/ethanmoffat/etheos

- Fork of popular server emulator written in C++, which emulates the original game server of the classic 2D isometric MMORPG "Endless Online".

- Improved developer experience by adding dependency installation and build scripts.

- Added bcrypt password hashing for more secure password hash generation (previously sha256). Wrote custom thread pool system to schedule expensive hash operations on background threads.

- Integrated with SQL server database engine.

- Added automated cloud deployment via CI pipelines using Azure ARM templates.

- Wrote sanity integration tests using scripting language and bot developed for EndlessClient (above).