www.jinwooyom.com

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Summary:

- Accomplished Computer Engineer with 4+ years of experience in full-stack development •
- Seeking a position as a Software Engineer in an innovative and engaging organization. •

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- Familiar with Agile Development Lifecycle, Object Oriented Development Methodologies, and design patterns
- Knowledgeable in Linux and Windows OS, cloud services, and languages including Python, Javascript, Java, C/C++ •

Work Experience:

QCT Software Engineer, Qualcomm, San Diego, CA

- Extended Machine Learning (ML) features for Vulkan graphics API to enable convolutional neural network
- Utilized CMake, Bash, and Python scripts to orchestrate a centralized build system that supports build targets of three major Graphics API platforms (OpenGL, Vulkan, DirectX12) and improved build time by 42%
- Developed a C/C++ based unit/integration/function test framework of Vulkan ML in CI/CD Pipeline •

QCT Software Intern, Qualcomm, San Diego, CA

- Architected and migrated Log Analysis Framework (LAF) into AWS to improve performance and scalability by 78%
- Resolved the performance bottlenecks of LAF's parsing throughput using asynchronous operations, SQS, and Lambda
- Automated the integration tests for Snapdragon build images using C/C++, C#, and Python in the CI/CD pipeline
- Developed a bug crawler tool to identify the root injection point of major bugs within the work trees of perforce repository •

Cyber Security/DevOps Developer, Virginia Cyber Range, Blacksburg, VA

- Utilized AWS to provide on-demand provisioning services of virtualized sandbox environments for cyber security students •
- Developed Typescript-based REST API services and containerized using Docker for portability and scalability
- Implemented factory design pattern to improve flexibility and consistency of the core software stack of RESTful services •
- Developed unit/integration/function tests for the CI/CD pipeline using Mocha/Chai testing framework •
- Designed and documented REST API contract using Swagger to improve collaboration and API visualization •

Education:

M.S. in Computer Engineering, May 2020	B.S. in Computer Engineering, May 2017
Virginia Tech Computer System Security	Virginia Tech Computer Engineering

Technical Skills:

- Languages: Python, JavaScript, Java, C, C++, C#, ReactJS, NodeJS, TypeScript, HTML, CSS, BASH, PHP •
- Tools: Git, AWS, Docker, Azure, Swagger, Postman, LLVM, Wireshark, Burp Suite, Unity 5
- Cloud Environment: AWS (EC2, S3, SQS, ELB, RDS, Route53, Lambda, IAM), GCE, Azure •
- Databases: MySQL, MongoDB, DynamoDB, RDS, Elastic Search, NoSQL, PostgreSQL, OracleSQL •
- OS & IDE: Linux, Windows, Visual Studio Code, Qt, IntelliJ, Eclipse, Brackets, Sublime, Vim •

Publications:

HyperSpace: Data-Value Integrity, Blacksburg, VA

- Researched and developed an innovative Linux kernel defense policy by customizing LLVM compiler and Linux kernel •
- Enforces the integrity of security-sensitive data from all known modern memory corruption and ROP based attacks •
- Implemented a technique that immobilize the use of corrupted memory by protecting read-only copies of sensitive data in a • shadow region called "Hyperspace" using Intel's Memory Protection Key (MPK)
- Optimized the Linux kernel and LLVM implementation to only 1.02% runtime and 14.42% memory overhead

Mardu: Efficient and Scalable Code Randomization, Blacksburg, VA

- Developed an on-demand runtime code re-randomization security technique to thwart code-reuse attacks
- Modified LLVM/Clang compiler to generate binaries that utilize hidden code-pointers and custom calling convention •
- Modified Linux kernel to implement custom binary execution as outlined by the modified metadata of executable files •
- Implemented function-level granularity re-randomization technique to achieve high entropy binary shuffling •
- Optimized for minimal runtime overhead of the implementations at 5.5% for SPEC and 4.4% for NGINX •

April 2018 – January 2020

May 2017 – September 2019

May 2018 – August 2019

January 2020 – September 2021

May 2017 – May 2018