MYUNG GUK LEE

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https://truelinker.github.io/MyungBlog/

WORK EXPERIENCE

Innphase • Irvine, CA **03/2023 - Present**

Staff Firmware Engineer

- Optimized SRAM usage by implementing FreeRTOS in XIP (Execute-In-Place) mode on FPGA(Xilinx ZCU102), executing code directly from flash memory while maintaining system performance.
- Implemented JSON decoder library with static memory allocation for embedded system with limited memory, ensuring predictable memory usage and validated through comprehensive unit testing.
- Developed the SPI/QSPI NOR Flash device driver for a file system using FileX/ LevelX on Azura RTOS.
- Accelerated Digital Pre-Distortion (DPD) algorithm performance by leveraging ARM NEON SIMD instructions, optimizing parallel computations through vectorized operations.
- Developed an automated testing system using Python, improving testing efficiency and accuracy.

Western Digital Inc. • Irvine, CA **06/2014 - 03/2023**

Principal Firmware Engineer

• Developed and implemented advanced security features (TCG, ATA Security, and Sanitize) for Enterprise HDDs (SATA and SAS).

Staff Firmware Engineer

- Development of the PCIe AHCI device driver for Hybrid HDDs.
- Played a key role in the development of DUAL-SIO(Half & Full Duplex Serial protocol), resulting in manufacturing cost savings through a more flexible test equipment usage.

AnyData •Irvine, CA **06/2012 - 06/2014**

Senior Firmware Engineer

- Implemented remote firmware upgrades featuring Firmware Over-the-Air(FOTA), enhancing product functionality and user experience.

SKILLS

- **Language**
  - C/C++ , Python, Bash shell script
- **Networking**
  - TCP, UDP, ARP, DHCP, VLAN, L2/L3 Ethernet switches
- **Embedded OS**
  - Linux, FreeRTOS, Azura RTOS(ThreadX)
- ARM NEON SIMD
- JTAG Debuggers
- PCIe
- SPI/QSPI
- UART/GPIO
- TCG/ATA Security
- SATA/SAS
- Git/SVN

EDUCATION

MS in Computer Science
University of California, Irvine, CA

BS in Science in Computer Science
Hanshin University

DASAN Networks • South Korea **12/2005 - 06/2010**

Software Engineer

- Led embedded software development for L2 Ethernet switches, implementing complex networking protocols and managing real-time packet processing using C/C++ on Linux systems with Broadcom and Marvell ASICs.
- Implemented high-performance packet monitoring system utilizing TCP/IP stack and IPC mechanisms using Unix domain sockets and shared memory for inter-process data sharing, resulting in real-time troubleshooting capabilities for enterprise-grade L2 switches.
- Developed robust security applications, including DHCP snooping and Address Resolution Protocol (ARP) inspection, enhancing network protection and integrity.

Developed a subscribers' access monitoring system for Korean Telecom (KT) Corporation, enhancing network management efficiency and service reliability.

AWARDS

- **Spot Award Winner. • Innophase• 2024**
- **High-Five employee recognition • WesternDigital• 2018**
- **Best Thesis •Korean Information Processing Society• 2012**
- **Summer Code Competition •ICS of UC,Irvine• 2012**

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