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2017 Internship – Memory Solutions Lab – Samsung Semiconductor

1)	Enterprise Product Development (Intern)	San Jose, CA
2)	Memory System Accelerator Architect (Intern)	San Jose, CA
3)	Memory System Architect (Intern)	San Jose, CA
4)	Performance Architect (Intern)	San Jose, CA
5)	Simulation Engineer (Intern)	San Jose, CA
6)	Management Software Engineer (Intern)	San Jose, CA
7)	Storage Software Engineer (Intern)	San Jose, CA
8)	Spark GPU Engineer (Intern)	San Jose, CA
9)	System Software Engineer (Intern)	San Jose, CA
10)	Systems Software Engineer (Intern)	San Diego, CA

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Enterprise Product Development (Intern)

Samsung Semiconductor, Inc. is a world leader in Memory, System LSI and LCD technologies. We are currently looking for exceptional software talent to join our team in San Jose, CA. We are currently looking for firmware/software engineers to join our rapidly growing effort to develop the next generation of enterprise solid-state flash technologies. Our core development focus is the host interface firmware layer that sits at the intersection of system software and flash management firmware. This key host interface firmware technology drives Samsung's breakthrough V-NAND technology and enables our customer to power performance-oriented, demanding enterprise-class applications including hyperscale data centers, big data processing and software-defined virtualized storage arrays and infrastructures.

Responsibilities

- Triage and root cause system, driver and device interoperability issues
- Development of high performance firmware and software for cutting-edge enterprise SSD products.
- Debug, optimize & validate SSD firmware on embedded multi-core architectures
- Support customer qualification and adoption of SSD products
- Learn operations of cutting-edge SSD, system-level operation and test tool suites
- Write debug software; work with real-time systems and hardware degugging
- Analyze NVMe or SAS protocol & debug utilities; write API for interpretation of data
- Learn simulation environment and develop test cases for actual product development
- Research and document main issues and feature gaps by testing existing products and system configurations
- Gain expertise with SSD test automation environment
- Work with technical lead to present reports to group detailing project work

Education/

Experience

- Pursuing a MS or PhD in Computer Science, Computer Engineering or software-focused Electrical Engineering (or BS degree with equivalent experience.
- Knowledge of storage systems and familiarity with flash devices
- Comfortable in lab environment & interacting with teams; good communication skills
- Proficiency with revision control tools and processes, including Subversion, Bazaar, or Git and knowledge of C/C++ development for embedded systems, including storage devices and other embedded platforms is desirable.
- Experience with one or more of the following storage related technologies: NAND Flash/FTL, Fibre Channel, NVM Express (NVMe), SAS, SATA, SCSI, SSD, PCI Express (PCIe), eMMC or UFS is desirable
- Experience with ARM or equivalent embedded multi-core microprocessor architectures & experience with JTAG/ICE debuggers & protocol analyzers is desirable
- Scripting experience in one of Python/Perl/JavaScript is desirable
- Familiarity and experience with modern agile software development methodologies and practices is desirable.

Application Link: http://www.samsung.com/us/samsungsemiconductor/careers/index.html?p=job%2FoMZl4fwU

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Memory System Accelerator Architect (Intern)

Samsung Semiconductor, Inc. is a world leader in Memory, System LSI and LCD technologies. We are currently looking for a Memory System Accelerator Architect (Intern) to join our team in San Jose, CA. The Memory System Architect Intern will contribute memory and storage system research in the System Architecture Lab. She or he will join a team of experts in researching and developing innovative memory and storage system solutions that utilize existing and emerging technologies to add substantial value to server systems. The ideal candidate must have a strong understanding of computer architecture, memory and storage system and operating system.

Responsibilities

- Contribute technical path finding of computation acceleration architecture in memory system.
- Contribute technical path finding of novel memory and storage architecture
- Contribute memory and storage system performance modeling, and sever workloads characterization.
- Define component level requirement of memory and/or storage components.
- Work with team members to guide implementation and prototyping efforts.
- Create new and useful IP, publish at conferences, and generate white papers.

Background/ Experience

- Pursuing a MS or PhD in Computer Architecture, Electrical Engineering, Computer Science or related field.
- Deep understanding of memory and storage architecture trade-offs and GPU architecture.
- Good understanding of machine learning application and related software/hardware architecture.
- Experience in memory/storage subsystem performance modeling.
- Experience in memory system design or storage system design will be great plus.
- Track record of innovation and creativity in problem solving.

Skills

- Must be highly motivated with excellent verbal & written communication skills.
- Research and development experience with modeling, performance analysis, simulation tool development.
- Strong background in C/C++ programming
- Comfortable working in a multinational environment and understands how to leverage cultural diversity.
- Good technical spark and inherent technical curiosity.

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Memory System Architect (Intern)

Samsung Semiconductor, Inc. is a world leader in Memory, System LSI and LCD technologies. We are currently looking for a Memory System Architect (Intern) to join our team in San Jose, CA. The Memory System Architect Intern will contribute memory and storage system research in the System Architecture Lab. He or she will join a team of experts in researching and developing innovative memory and storage system solutions that utilize existing and emerging technologies to add substantial value to server systems. The ideal candidate must have a strong understanding of computer architecture, memory and storage system, and operating system.

Responsibilities

- Contribute technical path finding of novel memory and storage architecture using emerging memory technology.
- Contribute memory and storage system performance modeling, and sever workloads characterization.
- Define component level requirement of memory and/or storage components.
- Work with team members to guide implementation and prototyping efforts.
- Create new and useful IP, publish at conferences, and generate white papers.

Background/ Experience

- Pursuing a MS or PhD in Computer Architecture, Electrical Engineering, Computer Science or related field.
- Deep understanding of memory and storage architecture trade-offs in terms of performance and energy efficiency.
- Experience in memory/storage subsystem performance modeling.
- Good knowledge of data centers, and typical applications.
- Experience in memory system design or storage system design will be great plus.
- Track record of innovation and creativity in problem solving.

Skills

- Must be highly motivated with excellent verbal & written communication skills.
- Research and development experience with modeling, performance analysis, simulation tool development.
- Strong background in C/C++ programming
- Comfortable working in a multinational environment and understands how to leverage cultural diversity.
- Good technical spark and inherent technical curiosity.

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Performance Architect (Intern)

Samsung Semiconductor, Inc. is a world leader in Memory, System LSI and LCD technologies. We are currently looking for a Senior Performance Architect to join our team in San Jose, CA. The Intern Performance Architect will be a key technical contributor in the System Architecture Lab. He or she will join a team of experts in researching and developing innovative solutions that utilize existing and emerging technologies to add substantial value to server systems. The ideal candidate must have a strong understanding of server systems – including memory and storage systems – as well as how to effectively model the performance trade-offs involved.

Responsibilities

- Research architectural trade-offs of server architectures, especially as related to the memory hierarchy and storage systems.
- Propose changes to memory and storage systems to support new technologies that improve power or performance.
- Define performance analysis methodology. Select commercially available tools or develop internal simulators as appropriate. Build out infrastructure, including models and test suites.
- Create new and useful IP, publish at conferences, and generate whitepapers and specification documents.

Education/ Experience

- Enrolled in MS or PhD Programs in Computer Architecture, Computer Science, Electrical Engineering, or related field.
- Experience in system architecture and performance analysis
- Good understanding of computer architecture: server systems, data centers, processors, memory hierarchy, memory subsystems, storage, I/O, networking.
- Project or relevant experience in storage and flash technologies.
- Understanding of typical server applications and benchmarks (web and applications servers, storage tier, big data, no-SQL and relational databases, map-reduce, memcached, HPC, SPEC, PARSEC, etc.)
- Solid understand of Linux/Windows performance analysis tools & methods.
- Direct experience building and deploying Linux kernel components.
- Track record of innovation and creativity in problem solving

Skills

- Research and development experience with modeling, performance analysis, simulation tool development
- Ability to characterize, analyze and fix performance issues across hardware, firmware and software/
- Strong background in C/C++ programming and Java
- Proficient in Python or other data analysis tools (R/Matlab, etc.)
- Highly motivated with excellent verbal & written communication skills.
- Ability to work successfully with cross-functional teams, including communicating across organizational boundaries and geographies.
- Comfortable working in a multinational environment and understands how to leverage cultural diversity.

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Simulation Engineer (Intern)

Samsung Semiconductor, Inc. is a world leader in Memory and Storage technologies. We are currently looking for a Simulation Engineer (Intern) to join our team in San Jose, CA. The Simulation Intern will contribute memory and storage system research in the Memory Solutions Lab. He or she will join a team of experts in researching and developing innovative memory and storage system solutions that utilize existing and emerging technologies to add substantial value to storage systems. The ideal candidate must have a strong understanding of key-value store, file I/O, and simulation as well as good understanding of computer architecture and storage systems.

Responsibilities

- Implement proof-of-concept key-value store for simulation
- Compare the performances with different configurations.
- Analyze performance bottleneck and propose new architecture and storage systems.
- Work with team members to contribute towards prototyping efforts.
- Create new and useful IP, publish at conferences, and generate white papers.

Background/ Experience

- Pursuing an MS or PhD in Computer Science, Computer Engineering or related field, with focus on Storage or Computer Architecture.
- Good knowledge of any simulator.
- Research and development experience with storage.
- Prior experience with performance analysis and optimization will be a big plus.
- Track record of innovation and creativity in problem solving.

Skills

- Must be highly motivated with excellent verbal and written communication skills.
- Understanding of image recognition.
- Strong background in C/C++ programming.
- Comfortable working in a multinational environment and understands how to leverage cultural diversity.
- Inherent technical curiosity

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Management Software Engineer (Intern)

Samsung Semiconductor, Inc. is a world leader in Memory, System LSI and LCD technologies. We are currently looking for exceptional software talent to join our team in San Jose, CA. The Memory Solutions Labs (MSL) is part of Samsung's Memory Business Unit, the industry's technology and volume leader in DRAM, NAND Flash, SRAM memory. MSL's vision is to solve key problems & optimize architecture solutions for Cloud & Data center environments. We are an integral part of Samsung's strong R&D focus & lab innovation engine. We work closely with development teams to bring feature innovation to product roadmaps. We are currently looking for a Software Engineering Intern to join our team of Engineers in San Jose, CA. The candidate will be part of Memory Solutions Lab, which is responsible for the design and development of enterprise, data-center and cloud storage software, including hardware/software enterprise-class scale-out storage solutions.

Responsibilities

- Work with engineering team to quickly digest our designs/architectures and contribute to optimizations, improvements, prototypes and fixes.
- Acquire in depth understanding of open source management software stacks and develop plug-ins.
- Create new and useful IP, publish at conferences, and generate whitepapers. .
- Interns are encouraged and empowered to drive their own development projects—ask questions, design solutions, and own the results.

Education/ Experience

- Pursuing M.S. or PhD in computer science or equivalent
- The ideal candidate will have many of the following software development experience and skills:
  - Linux kernel and user-mode development.
  - Strong python, C++, Java programming experience with algorithm design skill.
  - Experience with scale-out storage stacks, OpenStack, VMware, etc.
  - Experience with variety of file systems, block driver, & storage stack.
  - Experience with distributed computing and storage.

Skills

- Top-notch problem solving skills
- Demonstrated ability to write good "social" code
- Open mind and willingness to learn from peers
- Ability to work effectively in a complex development environment
- Commitment to deliver on time and to specifications
- Excellent collaborative skills including written and verbal communication
- Innovative thinker in all areas of system design and debugging.
- Understanding of storage technologies (SCSI/RAID/FC/iSCSI/NAS/SAS) on various storage devices a strong plus

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Storage Software Engineer (Intern)

Samsung Semiconductor, Inc. is a world leader in Memory, System LSI and LCD technologies. We are currently looking for exceptional software talent to join our team in San Jose, CA. The Memory Solutions Labs (MSL) is part of Samsung's Memory Business Unit, the industry's technology and volume leader in DRAM, NAND Flash, SRAM memory. MSL's vision is to solve key problems & optimize architecture solutions for Cloud & Data center environments. We are an integral part of Samsung's strong R&D focus & lab innovation engine. We work closely with development teams to bring feature innovation to product roadmaps. We are currently looking for a Software Engineering Intern to join our team of Engineers in San Jose, CA. The Candidate will be part of Memory Solutions Lab, which is responsible for the design and development of enterprise, data-center and cloud storage software, including hardware/software enterprise-class scale-out storage solutions.

Responsibilities

- Work with engineering team to quickly digest our designs/architectures and contribute to optimizations, improvements, prototypes and fixes.
- Acquire in depth understanding of open source storage software stacks and develop resource utilization models and benchmarking tools.
- Create new and useful IP, publish at conferences, and generate whitepapers. .
- Interns are encouraged and empowered to drive their own development projects—ask questions, design solutions, and own the results.

Education/ Experience

- M.S. or PhD candidacy in computer science or equivalent
- The ideal candidate will have many of the following software development experience and skills:
  - Linux kernel and user-mode development.
  - Strong python, C, C++ programming experience with algorithm design skill.
  - Experience with storage & system performance benchmarking tools.
  - Experience with scale-out storage stacks, OpenStack, VMware, etc.
  - Experience with variety of file systems, block driver, & storage stack.
  - Experience with distributed computing and storage.

Skills

- Top-notch problem solving skills
- Demonstrated ability to write good "social" code
- Open mind and willingness to learn from peers
- Ability to work effectively in a complex development environment
- Commitment to deliver on time and to specifications
- Excellent collaborative skills including written and verbal communication
- Innovative thinker in all areas of system design and debugging.
- Understanding of storage technologies (SCSI/RAID/FC/iSCSI/NAS/SAS) on various storage devices a strong plus

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Spark GPU Engineer (Intern)

Samsung Semiconductor, Inc. is a world leader in Memory and Storage technologies. We are currently looking for a Spark GPU Engineer (Intern) to join our team in San Jose, CA. The Spark Engineer Intern will contribute memory and storage system research in the Memory Solutions Lab. He or she will join a team of experts in researching and developing innovative memory and storage system solutions that utilize existing and emerging technologies to add substantial value to storage systems. The ideal candidate must have a strong understanding of computer architecture and storage systems.

Responsibilities

- Implement a customized Spark GPU platform.
- Compare the performances in different approaches for heterogeneous computing in Spark.
- Analyze performance bottleneck and propose new architecture.
- Work with team members to contribute towards prototyping efforts.
- Create new and useful IP, publish at conferences, and generate whitepapers.

Background/ Experience

- Pursuing an MS or PhD in Computer Science, Computer Engineering or related field, with focus on distributed system.
- Good knowledge of Spark internals.
- Research and development experience with Spark.
- Prior experience with performance analysis and optimization will be a big plus.
- Track record of innovation and creativity in problem solving.

Skills

- Must be highly motivated with excellent verbal and written communication skills.
- Strong background in C/C++/Java/Scala.
- Comfortable working in a multinational environment and understands how to leverage cultural diversity.
- Inherent technical curiosity

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System Software Engineer (Intern)

Samsung Semiconductor, Inc. is a world leader in Memory and Storage technologies. We are currently looking for a System Software Engineer (Intern) to join our team in San Jose, CA. The System Software Engineer Intern will contribute memory and storage system research in the Memory Solutions Lab. He or she will join a team of experts in researching and developing innovative memory and storage system solutions that utilize existing and emerging technologies to add substantial value to storage systems. The ideal candidate must have a strong understanding of *nix kernel, network, file I/O, and computer architecture.

Responsibilities

- Implement a given system software.
- Analyze performance and find root causes of inefficiency.
- Work with team members to contribute towards prototyping efforts.
- Create new and useful IP, publish at conferences, and generate white papers.

Background/ Experience

- Pursuing an MS or PhD in Computer Science, Computer Engineering or related field, with focus on Computer Architecture and Systems.
- Good knowledge of computer system in general.
- Research and development experience.
- Prior experience with performance analysis and optimization will be a big plus.
- Track record of innovation and creativity in problem solving.

Skills

- Must be highly motivated with excellent verbal and written communication skills.
- Strong background in C/C++ programming.
- Comfortable working in a multinational environment and understands how to leverage cultural diversity.
- Inherent technical curiosity

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Systems Software Engineer (Intern)

Samsung Semiconductor, Inc. is a world leader in Memory, System LSI and LCD technologies. We are currently looking for exceptional software talent to join our team in San Diego, CA. The Senior Systems Software Engineer, Storage Solutions Group will focus on the development of storage I/O stack: deduplication, compression, enterprise data management solutions. This is a hands-on development position that includes mentoring, design reviews, coding standards and tool selection. This position sets the example in planning, scoping, designing and implementing optimized and maintainable systems software expediently and with minimal risk. This position also sets the example in executing on product and architectural requirements.

Responsibilities

- Work closely with senior staff and managers to define and drive the creation of new and novel intellectual property.
- Learn and apply software engineering best practices.
- Create prototypes and proofs of concept.

Education/ Experience

- Currently pursuing a Ph.D. in computer science or computer engineering.
- Interns are encouraged and empowered to drive their own development projects.

Skills

- Excellent C/C++ skills
- Excellent problem solving skills
- Excellent verbal and written communication skills
- Some general knowledge of object oriented and/or structured design
- Some knowledge of other programming languages (Java, Clisp, Python, ML, Prolog, etc.)

Preferred Qualifications:

- Some knowledge of embedded development best practices
- Some experience with artificial intelligence
- Some knowledge of networks, networking best practices, storage technologies (file and block interfaces, caching solutions, solid state devices, and/or enterprise storage solutions)

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