TAEJIN KIM

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WORK EXPERIENCE

Meta, *Software Engineer* **May 2022 - Present**

- Developed directory/file metadata serving systems for warm storage (a.k.a. Tectonic) having 100EB+ and 9 trillion QPS. Supported **Meta's GenAI (LLaMA 3)** with flash, while resolving spiky congestions with multi-tenancy and optimizing scaling.
- Led regional-scale file metadata storage project (20EB per cluster) to achieve 10x scalability. Mitigated the uncertain risks by designing comprehensive testing mechanisms, improved efficiency by coalescing and workflow optimization, and redesigned components for scalability.
- Led achieving multi-tenancy overload protection for metadata's critical resources (DB shard limit, CPU, capacity) by applying distributed counting system and discriminant load shedding while optimizing the latency and performance for the features.

Amazon, *Software Development Engineer II* **Nov 2019 – Mar 2022**

- Led integration of the On-demand Vendor Negotiation system into an organization-wide vendor data analysis platform. Collaborated with counterpart teams to clarify business/technical requirements and develop the features, designed seamless UX/UI and backend APIs over the products, and managed the project launch schedule. Resolved technical challenges such as reduced latency with ElasticSearch to fulfill SLAs and used multi-threading to optimize workflow.
- Designed and implemented the multiple components across the team – user permission system with simple/scalable onboarding mechanism, notifier for negotiation status updates, tracking system for customer agreements to prove actions, dynamic term selection for negotiators to choose the order of negotiating terms with validating correctness, etc.

Kakao Corporation, *Software Engineer / Researcher* **Aug 2016 - Nov 2019**

- Designed and implemented the automatic data migration system that transferred old/unmodified data to cold storage reducing size by 33% with an optimized scanning strategy in hundreds of petabyte scale distributed file system.
- Developed and operated a large-scale cache service (~20k TPS per host, 800+ hosts) with 2 layered distributed clusters. Also designed the file caching system with a regex invalidation strategy, reducing the fluctuation of IO performance by 80%, and optimizing lock logic with a bloom filter to prevent slowdown from overloaded contents, increasing speeds by 300%.
- Managed a key-value storage component (HBase) for file metadata that recovers lost storage items, gathered/analyzed the statistics of storage usage/traffic by services, and reformed meta structure to achieve better consistency.
- Made guidelines for coding interview evaluation and educated new interviewers as a coding interview TF. Set programming questions for SWE candidates and took/reviewed 50+ times of real-time programming interview as senior interviewer.

Industry Research Projects

Funded by ***Samsung Electronics*** — Concolic Testing for Detecting Bugs in Bio-processor S/W **Jun 2015 - May 2016**

- Developed a concolic automated testing tool (CREST) to support floating point arithmetic and symbolic array index operations, and applied the tool on embedded systems with hard memory constraints.

Funded by ***LG Electronics*** — Test Case Generation Framework for Detecting Bugs in Home Appliance S/W **Feb 2015 - Sep 2015**

- Developed a detecting integer promotion bug framework by applying false alarm reduction method using static analysis technique and used the framework to detect the bugs in real-world programs.

EDUCATION

Korea Advanced Institute of Science and Technology (KAIST), Daejeon, Republic of Korea **Sep 2014 - Aug 2016**
Master of Science *in School of Computing*
Thesis: Coverage Improvement of Concolic Testing by Optimizing Symbolic Array Index Operations
Advisor: Professor Moonzoo Kim

Chung-Ang University, Seoul, Republic of Korea **Mar 2011 - Aug 2014**
Bachelor of Science *in Computer Science and Engineering* (Summa Cum Laude)

PUBLICATIONS

Yunho Kim, **Taejin Kim**, Moonzoo Kim, et al., *Effective Integer Promotion Bug Detection Technique for Embedded Software*, Journal of KIISE: Software and Applications, Vol. 43, Num 6, Jun 2016

Taejin Kim, Moonzoo Kim, et al., *Detecting Integer Promotion Bugs with Embedded Software using Static Analysis Technique*, Korea Computer Congress, Dec 17-19, 2015 **(Best Paper Award)**

SKILLS

C++ Python Java C Multi-Threading/Processing AngularJS Ansible HBase Concolic Testing Clang/LLVM OOP Git Agile AWS DynamoDB S3 SNS SQS Lambda Step Functions ElasticSearch