TAEJIN KIM

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WORK EXPERIENCE

Amazon, *Software Development Engineer II*   **Nov 2019 - Present**

- 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.
- Led design and development of bulk upload system for vendor relationship management service using S3, SQS, and lambda, allowing users to upload information from vendors at once, operated by parallelized lambda functions for speed up.

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.
- Designed a caching file system with a regex cache 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%.
- Developed and operated a large-scale cache service (~20k TPS per host, 500+ hosts) with 2 layered distributed clusters, cache invalidation worker servers, the serverless service (Openwhisk) for in-house developers.
- Developed a fast memory cache plugin for high traffic – mid volume services, allowing 400% of traffic without delay.
- 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.

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

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

SPECIALIZATIONS

- Highly scalable distributed file storage systems, cloud computing with data analysis, and web cache systems with efficient service traffic control
- Achieving reliability on software systems with fast error detection/failover/recovery
- Refining complex business requirements and designing simplified systems for scalability/extensibility
- Automated software testing and static/dynamic code analysis on large and complex software