

Jung-Sang Ahn

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greensky00.github.io • github.com/greensky00 • Last modification: Jul. 2017

Employment and Education

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|---|-------------------------------------|
| eBay Inc. Member of Technical Staff, Distributed Systems | SAN JOSE, CA 2017 – present |
| Couchbase, Inc. Senior Software Engineer | MOUNTAIN VIEW, CA 2015 – 2017 |
| KAIST (Korea Advanced Institute of Science and Technology) Bachelor, Master, and Ph.D. in Computer Science | DAEJEON, SOUTH KOREA 2004 – 2015 |

Experiences (Selected)

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| Member of Technical Staff at eBay <i>Working on next-generation distributed database platform.</i> | 2017–PRESENT |
| Senior Software Engineer at Couchbase <i>Worked on developing storage engine, designing index structures, and optimizing in-memory cache, file system, and block device I/O.</i> <ul style="list-style-type: none">• ForestDB project<ul style="list-style-type: none">– A single node key-value storage engine. Developed as a standalone library and deployed in the various modules in Couchbase software.– The original inventor and main contributor: designed and developed the main index structure (HB⁺-trie), and other fundamental concepts including block cache, write-ahead logging and circular block reusing.– Published a paper (refer to the below publication section). | 2015–2017 |
| Research Assistant at KAIST <i>Worked on optimizing FTL (Flash Translation Layer), designing index structures for storage (HDD and SSDs), kernel programming including embedded OS and mobile platform (ARM Linux and Android), and file system optimization.</i> <ul style="list-style-type: none">• UX-Oriented Mobile Software Platform<ul style="list-style-type: none">– Funded by Korean government.– A huge academic project in collaboration of 11 graduate school laboratories and 2 companies including LG electronics.– Worked on core mobile kernel part, designed and developed a lightweight encryption file system for Android platform.– Published a paper (refer to the below publication section).• A High-Performance FTL for Large-Capacity Flash SSDs<ul style="list-style-type: none">– Funded by Samsung Electronics.– Development of fast and memory-efficient flash translation layer (FTL) for commercial SSDs.– Worked on mapping and indexing part, designed and developed a flash-optimized index structure, called μ^*-tree, which is the main mapping structure for the FTL.– Published a paper (refer to the below publication section). | 2008–2015 |

Publications

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| ForestDB: A Fast Key-Value Storage System for Variable-Length String Keys IEEE Transactions on Computers | 2016 Jung-Sang Ahn, Chiyong Seo, Ravi Mayuram, Rahim Yaseen, Jin-Soo Kim, and Seungryoul Maeng |
| Low-Overhead User Data Protection for Smartphones using Plaintext Cache IEEE Mobile Security Technologies (Symposium on Security and Privacy) | 2013 Jung-Sang Ahn and Seungryoul Maeng |

Honors and Awards

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| ACM SIGMOD Programming Contest | 3RD PLACE (2012), FINALIST (2011) |
| Samsung Humantech Thesis Award | BRONZE (2008), SILVER (2004), HONORABLE MENTION (2003) |
| Korea Olympiad in Informatics (KOI) | GOLD MEDAL (2001) |

Skills

Programming languages: C (*proficient*), C++ (*proficient*), MSVC (*experienced*), C# (*experienced*), Java (*experienced*), VB.Net (*experienced*), PHP (*experienced*).

Technical specialties: storage engines, index structures, in-memory caching, file systems, key-value store, Linux kernel programming, embedded systems, debugging with GDB, flash translation layer.

Interests

- Designing index structures for HDDs and SSDs
- Reducing block device I/O overhead (read/write amplification)
- Improving in-memory cache performance
- Reducing lock contention upon multi-threaded workloads
- Linux kernel programming
- Mobile kernel programming
- File system programming