Fadhil I. Kurnia

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RESEARCH INTERESTS
Distributed System, Networked System, Privacy-preserving system, Systems for Machine Learning

EDUCATION

UNIVERSITY OF MASSACHUSETTS AMHERST	2020-present
MS/PhD in Computer Science - CGPA 3.93/4.0	Amherst, MA, USA
BANDUNG INSTITUTE OF TECHNOLOGY (ITB)	2015-2019
BSc in Informatics/Computer Science - CGPA 3.83/4.0 Graduated with Cum Laude Distinction	Bandung, Indonesia

RESEARCH EXPERIENCE

Privacy Preserving Distributed Replication for Smart Home System   UMass Amherst | Aug 2020-present
Advisor: Dr Arun Venkataramani
- Implemented prototype for privacy-preserving smart home system on top of popular primary backup system: ZooKeeper.
- Surveyed and presented existing techniques in secure distributed systems: SMPC, FSS, HSS.
- Contributed in paper writing for submission in SIGCOMM and NSDI conferences.

Google CS Research Mentorship Program (CSRMP)   Google Research | Feb - Apr 2021
Mentor: Dr. Rahul Garg
- Identified important research directions based on the current trends in the cloud based privacy preserving system.
- Summarized and categorized related works from top conferences in the area of distributed systems in the last 2 years.
- Discussed soft skills required for a good researcher: time management, networking & socializing, prioritization.

Eliminating Tail Latencies in Flash Arrays with Redundancy   University of Chicago | May 2018-Dec 2019
Advisors: Dr Haryadi S. Gunawi, Dr Huaicheng Li
- Implemented RAID-like redundancy in flash arrays to eliminate tail latency, client sends request to multiple SSD and proceeds with the fastest responses, using C based SSDSim.
- Added checkpoint messages inside OS kernel for latency measurement purposes. Profiled prototype performance using fio.
- Contributed in paper for submission to the FAST and OSDI conferences, manuscript ready upon request.

Garbage Collection (GC) Scheduling in SSD RAID to Minimize Its Collision   ITB | Aug 2018-May 2019
Advisors: Dr Achmad I. Kistijantoro, Riza S. Pradana
- Implemented 3 GC scheduling mechanisms in RAID environments on top of modified SSDSim that support multi-SSD.
- Presented the result as my bachelor thesis [code][report].

H-Touch: Application for Visually Impaired People   SMA 3 Semarang | 2014
- Developed an Android app with input mimicking braille character, tested together with blind community in Semarang.
- Received Gold Medal in Indonesian Science Project Olympiad 2014, and was nominated in 2014 International Youth Invention Exhibition in Taiwan. [regional-news] [local-news].

Faster System: Fast and Secure Cashier System   SMA 3 Semarang | 2013
- Implemented RFID based self checkout system to automatically calculate price and eliminate long customer queue.
- Awarded Silver Medal in Indonesian Science Project Olympiad 2013 and Gold Medal in Infomatrix 2013, Bucharest, Romania. [national-news].

INDUSTRY EXPERIENCE

RUANGGURU - BACKEND ENGINEER   Jakarta, Indonesia | Feb-Aug 2020
- Developed and maintained 3 backend services to handle quiz events and online learning platforms, main feature in the apps.
- Decreased average latencies by ~30% with caching layer on top of the services to support 1000+ req/second.
- Initialized LMS development that supports 100+ schools or organizations and their 100,000+ students during pandemic.

TOKOPEDIA - SOFTWARE ENGINEER INTERN   Jakarta, Indonesia | May-Aug 2017
- Implemented Tokopedia Feed, add posts in user feed when their favorite shops are listing new products.
- Implemented online mark & last seen feature in Tokopedia Chat website for 1,000,000+ monthly active users.
- Tech stack: Go, Postgres DB, Redis, NSQ, React JS, Neo4J Graph DB.

TEACHING EXPERIENCE

2021 Spring, Summer - Teaching Assistant of CS187-Programming w/ Data Structure in University of Massachusetts Amherst.
2019 Spring - Teaching Assistant of IF3111-Platform Based Development in Bandung Institute of Technology (ITB).

HONORS & AWARDS

2021	The Jim Gray Graduate Scholarship in Computer Science, CICS UMass Amherst, USA.
2019	South East Asia Machine Learning School (SEAMLS) Travel Grant in Depok, Indonesia.
2019	Experience KAIST School of Computing (SoC) Travel Grant in Daejeon, South Korea.
2016	GEMASTIK 9 National Semi-Finalist on Software Development Competition.
2014	Gold Medal at Indonesia Science Project Olympiad (ISPO 2014), category Computer.
2013	Gold Medal at Infomatrix 2013, International Project Competition category Software in Bucharest, Romania.
2013	Silver Medal at Indonesia Science Project Olympiad (ISPO 2013), category Computer.

TECHNICAL SKILLS

Lang: C/C++, Go, Java, Python, PHP, Shell Script   DB: MySQL, Postgres, Redis   Others: Kafka, Hadoop, Docker