

Jun Hyuk Chang

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in mallang

🏠 Google Scholar

EDUCATION

The University of Chicago

Sep. 2022 - May. 2027 (Expected)

Ph.D. in Computer Science

- Database system research in ChiData group, Advisor: Aaron Elmore

KAIST (Korea Advanced Institute of Science and Technology)

Sep. 2016 - Feb. 2018

M.S. in Computer Science

Early Graduation

KAIST (Korea Advanced Institute of Science and Technology)

Mar. 2013 - Aug. 2016

B.S. in Electrical Engineering

Early Graduation

Cum Laude, GPA in 4.0 scale: Overall(3.74), **Major**(3.82), **Upper**(3.98)

- Double major: Computer Science, Minor: Business and Technology Management

Seoul Science High School (SSHS)

Mar. 2010 - Feb. 2013

WORK EXPERIENCE

ByteDance (TikTok), San Jose, CA, USA

Research Scientist Intern

(15 weeks) Jun. 2025 - Sep. 2025

- Developed serializer/deserializer using Apache Arrow in Spark for OLAP DB.

SK hynix, Gyeonggi, South Korea

Tech Leader (Full time)

(1yr 2mos) Aug. 2021 - Sep. 2022

NAND Data Design Engineer Intern

(3mos) Dec. 2015 - Feb. 2016

- Designed and developed the platform and algorithm working between NAND and FIL layer.
- Designed a semiconductor(NAND) with read-and-write functions, verified through simulation and testing.

TmaxData, Gyeonggi, South Korea

Researcher, Team Leader (served as a military for 3 years) (Full time)

(3yrs 7mos) Feb. 2018 - Aug. 2021

- **Led the team** of 10 people and managed the database's active storage at a core level.
- Designed re-balance and re-sync functions of Database active storage manager, which manages all the tablespace maps and instances. Improved the performance and speed of existing products and solved problems such as memory leaks.
- Developed protocol with the cloud and auto-configured the database with the info from the protocol.

Kiswe Mobile Inc., New Providence, NJ, USA

Software Engineer Intern

(3mos) Jun. 2016 - Aug. 2016

- Developed the real-time interactive advertisement system that interact with user in Kiswe live stream.
- Developed the real-time voting system while live event. The result shows in graph real-time.

RESEARCH EXPERIENCE

ChiData (The University of Chicago) Chicago, IL, USA

Research Assistant (Advisor: Aaron Elmore)

Sep. 2022 - Present

- Designing multi-version hash table for secondary index in Crocodile Database using Rust. [c.3, c.4]
- Designed optimizer and re-designed the expression used in a logical and physical plan.
- Serialize and deserialize logical plan in DuckDB. [c.2]

KAIST Networking and Mobile Systems Lab (NMSL), Daejeon, South Korea

Research Assistant (Advisor: Sung-Ju Lee)

(1yr 5mos) Sep. 2016 - Jan. 2018

- Trained 4,000 datasets for the system that combines a long short-term memory(LSTM)-based recurrent neural network, and mobile computing techniques to make proper and real-time emoji/image suggestions. [p.1]
- Explored the possibility of active noise control using only commodity smartphones without costly equipment such as high-quality speakers, microphones, or devices that are uncomfortable to wear. [c.1, p.2]
- Designed the low-powered data collection methods in IoT. Granted 160K USD funding. [p.3, p.4]

PUBLICATIONS & PATENTS

Conference, Journal, and Workshop Papers

- [c.4] Enhancing Transaction Processing through Indirection Skipping
Riki Otaki, **Jun Hyuk Chang**, Goetz Graefe, Aaron J Elmore
VLDB 2025: Proceedings of the VLDB Endowment 18 (11), 4104-4116
- [c.3] Resource-Adaptive Query Execution with Paged Memory Management
Riki Otaki, **Jun Hyuk Chang**, Charles Benello, Goetz Graefe, Aaron J Elmore
CIDR 2025: Conference on Innovative Data Systems Research
- [c.2] Towards Resource-adaptive Query Execution in Cloud Native Databases
Rui Liu, **Jun Hyuk Chang**, ... , Aaron J Elmore, Michael J Franklin, Sanjay Krishnan
CIDR 2024: Conference on Innovative Data Systems Research
- [j.1] Amygdala resting-state functional connectivity alterations in patients with chronic insomnia disorder: correlation with electroencephalography beta power during sleep
Woojin Kweon, ... , **Jun Hyuk Chang**, Yu Jin Lee
Sleep, Volume 46, Issue 10, October 2023, zsad205, <https://doi.org/10.1093/sleep/zsad205>
- [c.1] Enjoy the Silence: Noise Control with Smartphones
Taesik Gong, **Jun Hyuk Chang**, Joon-Gyum Kim, Soowon Kang, Donghwi Kim, and Sung-Ju Lee
ICCCN 2017: IEEE International Conference on Computer Communications and Networks (Invited paper)

Patents

- [p.4] Method for Controlling Intelligent Data Collection Operation in Internet-of-Things Environment and Apparatus therefor
Sung-Ju Lee, **Jun Hyuk Chang**
Intl. patent (Filing date: 2018.10.29, No.PCT/KR2018/012919; Issued date: 2019.07.04, No.WO/2019/132215)
- [p.3] Method and Apparatus for Controlling Intelligent Data Collecting Operation in IOT System
Sung-Ju Lee, **Jun Hyuk Chang**
Korea patent (Filing date: 2017.12.29, No.10-2017-0184216; Issued date: 2019.11.26, No.10-2050787-0000)
- [p.2] Active Noise Control Using Smart-phone
Sung-Ju Lee, Taesik Gong, **Jun Hyuk Chang**, Joon-Gyum Kim, Soowon Kang, Donghwi Kim
Korea patent (Filing date: 2017.09.25, No.10-2017-0123715; Issued date: 2019.01.30, No.10-1945776-0000)
- [p.1] Recommendation System for Corresponding Message
Sung-Ju Lee, Joon-Gyum Kim, Tae-sik Gong, **Jun Hyuk Chang**, JeongGil Ko
Korea patent (Filing date: 2017.08.17, No.10-2017-0104408; Issued date: 2019.05.20, No. 10-1982081-0000)

TEACHING EXPERIENCE

CMSC14100 Introduction to Computer Science I , Teaching Assistant, uChicago	Fall 2023
CS408 Computer Science Project , Teaching Assistant, KAIST	Fall 2017
CS341 Introduction to Computer Networks , Teaching Assistant, KAIST	Fall 2016
CS204 Discrete Mathematics , Teaching Assistant, KAIST	Spring 2016

AWARDS & HONORS

1st Place, The World Embedded Software Contest , Korea Ministry of Trade, Industry, and Energy Won the grand prize in the autonomous driving contest using given mini-car with camera and sensors	2014
Bronze Prize, SAMSUNG Human Tech Paper Award , Samsung	2012
Korea Olympiad in Informatics Season School , Korean Institute of Information Scientists and Engineers Selected for a school, for the selection of the IOI(International Olympiad in Informatics) Korean national team	2010
1st Place, The Seoul Government Mathematical Olympiad , Seoul Metropolitan Government (Korea) Won the perfect score	2009

SCHOLARSHIPS BASED ON ACADEMIC PERFORMANCE

KSEA-KUSCO Graduate Scholarship	2024
National Scholarship, Korea Student Aid Foundation (KOSAF)	2016 - 2018
SK hynix Scholarship, SK hynix	2015 - 2018
KFAS Scholarship, Korea Foundation for Advanced Studies (KFAS)	2015 - 2016
National Science & Technology Scholarship, Korea Student Aid Foundation (KOSAF)	2015 - 2016
KAIST Scholarship, KAIST	2013 - 2015

EXTRACURRICULAR EXPERIENCE

Prography (Community for developers and designers), South Korea <i>Co-founder, Leader, Mentor</i> Co-founded and managed a community for developers and designers. Voluntarily participated as a mentor and led people in mobile application and web development. To date, about 300 members have joined the community, and over 20 services have been launched. http://prography.org/	<i>Feb. 2018 - Sep. 2022</i>
Qualcomm IT Tour, San Diego, CA, USA <i>Team Leader & Presenter</i> Selected as one of 25 college students in Korea and went on a tour to the Qualcomm headquarters in San Diego. As one of the 25 students, I was selected as 4 and had the honor of giving a presentation related to the future industry of 5G in front of Qualcomm CEO Paul E. Jacobs.	<i>Aug. 2017</i>
GoN (Hacking & Security Club), KAIST <i>Senior Member</i> Participation in security-related seminars such as web hacking and system hacking. Participated in CTF to solve security problems such as DEFCON.	<i>Mar. 2013 - Aug. 2016</i>
SPARCS (Developers Club), KAIST <i>Member of Server Management Group (Wheel) & Web Developer</i> Voluntarily participated in the server management group and managed FTP server in South Korea, and held seminars on the basics of server management for students. Topics include Linux, LDAP, mail server, file system, and security. Created free of charge services needed by schools, such as a site that can make a mock timetable and a community within the school. https://sparcs.org/	<i>Mar. 2013 - Aug. 2016</i>
National University of Singapore (NUS) <i>Non-Graduate(Exchange) Student</i> Overall GPA transferred: 4.0/4.0	<i>Aug. 2015 - Dec. 2015</i>
IEEE NUS Student Branch <i>Internal Project Team</i> Held an Arduino seminar for university students. Organized the program and assisted the invited professor.	<i>Aug. 2015 - Dec. 2015</i>
Samsung sGen Club <i>ICT Developer & Business Manager</i> Joined Samsung ICT Membership and developed android applications. Managed the team and planned the service as a business manager.	<i>Jul. 2013 - Sep. 2015</i>
Microsoft Student Partners <i>Developer</i> Held seminars as a volunteer, sharing basics of programming for students. Topics included C, JAVA programming, and Arduino. Organized events with Microsoft Korea.	<i>Jul. 2014 - Jul. 2015</i>