

DONGHYUN SOHN

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FIELD OF RESEARCH

- Privacy-preserving database
- Private data federation
- Query processing
- Systems for large-scale data

EDUCATION

Northwestern University

Evanston, IL

Ph.D. in Computer Science

Sep. 2022 - Present

- Advisor : Jennie Rogers

Sogang University

Seoul, Republic of Korea

B.S. in Computer Science and Engineering

Feb. 2016 - Aug. 2021

- Early Graduation, Summa Cum Laude

EXPERIENCE

Graduate Research, Northwestern University (Prof. Jennie Rogers)

Evanston, IL

Research Assistant

Sep. 2022 - Present

Undergraduate Research, Big Data Processing Lab (Prof. Sungwon Jung)

Seoul, Republic of Korea

Research Intern

Aug. 2020 - Dec. 2021

- Researched document clustering using graph autoencoder
- Researched disk-based buffer augmented clustering feature tree for big data processing
- Made the CF tree of BIRCH based on disk and added buffer to support huge volumes of data efficiently.

KATUSA(Korean Augmentation To the United States Army)

Camp Casey, Republic of Korea

Military Police (Compulsory Military Service)

Mar. 2017 - Dec. 2018

PUBLICATIONS

1. Donghyun Sohn, Sungwon Jung, "Disk-based BACF Tree for Clustering Massive Datasets," **Korea Software Congress 2021. (Encouragement Prize)**
2. Donghyun Sohn, Jinwon Jung, Hyungjoon Kwon, Donghyuk Jeong, Dayoung Yoon, Myungwan Koo, "A real-time monitoring system using OpenPose," **Korea Software Congress 2021. (Excellence Prize)**

SELECTED PROJECTS

Disk-based Buffer Augmented Clustering Feature Tree [link]

C++, JAVA, Python

Lab Project

Mar. 2021 - Oct. 2021

- Made the CF tree of BIRCH disk-based to solve the problem of BIRCH being affected by memory size
- Used K-Means clustering to get the final cluster
- Got better final cluster's purity and recall of BACF than BIRCH's CF tree

Building Management System [link] Python, Django, Flutter, PostgreSQL, OpenCV, HTML, JavaScript, CSS

Team Leader

Mar. 2021 - Aug. 2021

- Bangladesh startup support project organized by the Korea Invention Promotion Association and Korea Economic TV, rewarded 2200\$ for good performance
- Developed surveillance camera that detects worker's posture by using OpenPose
- Designed database and developed interconnected Android application, website, and server

Automation of Korean Port Open-Storage Yard [link] JAVA, Android Studio, MySQL, Apache Tomcat
Team Leader Mar. 2020 - Sep. 2020

- Designed database and constructed server
- Developed Android application

Pintos Projects [link] C, Ubuntu
Personal Project Sep. 2020 - Dec. 2020

- Implemented user program, thread, virtual memory

SIC/XE Machine [link] C, Linux
Personal Project Mar. 2020 - Jun. 2020

- Implemented shell, memory space, opcode table
- Implemented assemble, linking, loading

Text Mining with MongoDB [link] Python, MongoDB
Personal Project May. 2020 - Jun. 2020

- Analyzed news articles and found out the words mainly used in news articles by using the FP-Growth algorithm

Comparison of R Tree and KD Tree [link] C
Personal Project Nov. 2020 - Dec. 2020

- Constructed KD Tree, R Tree
- Sent Range Query, kNN Query to both trees and compare performances.

AWARDS

Excellence Prize, Korea Software Congress 2021 Dec 2021

Encouragement Prize, Korea Software Congress 2021 Dec 2021

SKILLS

Programming	C, C++, JAVA, Python, HTML, CSS, PostgreSQL, MySQL
Frameworks	Django
Tools	Git
Languages	English, Korean

UNDERGRADUATE TEACHING EXPERIENCES

Data Structure Mentor, Sogang University Mar. 2021 - Jun. 2021

- Helped students to learn Data Structure

Basic Engineering Design Mentor, Sogang University Mar. 2020 - Jun. 2020

- Helped junior students who are major in Computer Science and Engineering to learn the C language

International Student Mentor, Sogang University Mar. 2020 - Jun. 2020

- Helped international students who are major in Computer Science and Engineering

Computational Thinking Mentor, Sogang University

Mar. 2020 - Jun. 2020

- Helped students who are not major in Computer Science and Engineering to learn Python

2019 SW Camp Teaching Assistant, Sogang University

Jul. 2019 - Aug. 2019

- Helped Elementary School students to learn the Arduino

CERTIFICATION

ISTQB(KSTQB : Korean ver) - CTFL(Certified Tester Foundation Level)

Mar. 20. 2018