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# Hyunmo Sung

Homepage  
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## EDUCATION

**Master of Computer science**  
*Yonsei university, Seoul, Korea*

**March 2020 - February 2023**

Main courses: Multicore computing topics, Introduction to approximation algorithms

**Bachelor of Computer science**  
*Yonsei university, Seoul, Korea*

**March 2016 - February 2020**

Main courses: Algorithm analysis, Computer graphics, Compiler design, Multicore programming fundamentals

**Bachelor of Multimedia engineering**  
*Dongguk university, Seoul, Korea*

**March 2014 - February 2016**

Main courses: Multimedia Data Structures, Internet Programming, Multimedia Programming

## WORK EXPERIENCE

**Researcher**  
*ELC(Embedded Systems Languages and Compilers Lab)*

**February 2020 - February 2023**  
*Yonsei University, Seoul, Korea*

- Researched about the profile-guided-optimization.
- Evaluated the performance of the bloom filter using CUDA unified memory.
- Evaluated the performance of lazy parallel kronecker algebra on the modern GPU T4.
- Joint Research Project with DS Division of Samsung Inc. through Yonsei-Samsung Semiconductor Research Center (YSSRC) Program.

**Internship**  
*ELC(Embedded Systems Languages and Compilers Lab)*

**July 2019 - February 2020**  
*Yonsei University, Seoul, Korea*

- Researched about the kronecker algebra to detect the deadlock of the program.

## PUBLICATION

**Performance Evaluation of GPU-based Bloom Filters Using CUDA Unified Memory** **2022**  
*Hyunmo Sung, and Bernd Burgstaller*  
*Korea Software Congress 2022 (한국정보과학회 학술발표논문집 2022): 45-47.*

**Lazy Evaluation of Kronecker Algebra Operations on the Tesla T4 GPU** **2020**  
*Ham, Seokhwan, Hyunmo Sung, Shinhyung Yang, and Bernd Burgstaller*  
*Korea Computer Congress 2020 (한국정보과학회 학술발표논문집 2020): 44-46.*

## PATENT

**프로세스 인 메모리의 활용을 위한 오프로드 처리 방법 및 그를 위한 장치**  
**(Offloading methodology for utilizing Processing-In-Memory and the machine for it)**  
*Bernd Burgstaller, Hyunmo Sung, Seongho Jeong, Shinhyung Yang, Jayhwan Lee, and Jiun Jung.*  
*Application No. 10-2022-0162906, Nov 29 2022.*

## PROJECT

### Research on PGO

September 2021 - December 2022

*Master's Thesis*

- Developed a tool chain for PIM utilization by profile-guided-optimization.
- Developed a simple language that programmer can define offloading heuristic outside of the tool-chain.
- Evaluated performance of profile-guided-optimization for processing-in-memory on the simulator.

### Research on Kronecker algebra

September 2019 - December 2019

*Bachelor's Capstone project*

- Evaluated kronecker algebra computation on the cloud environment.
- Received 1st price between other capstone projects

### Research on AR

March 2019 - June 2019

*Bachelor's Capstone project*

- Developed an AR evacuation simulator using a projector and the kinect.
- Received 1st price between other capstone projects

## TEACHING EXPERIENCE

### • Teaching assistant

#### – Compiler Design (CSI4104-01)

Yonsei University, Seoul, Korea

Autumn 2021, Autumn 2022

#### – Computer Programming (CAC1100-01)

Yonsei University, Seoul, Korea

Spring 2022

#### – Computer Programming (CSI2100-01)

Yonsei University, Seoul, Korea

Spring 2020, Spring 2021

#### – SW Programming (YCS1002-11/12/13)

Yonsei University, Seoul, Korea

Spring 2021, Autumn 2021

#### – SW Programming (YCS1002-01)

Yonsei University, Seoul, Korea

Winter 2020

#### – Computational Thinking and SW Programming (YCS1001-04)

Yonsei University, Seoul, Korea

Autumn 2020

## AWARDS

### • Capstone project 1st place (졸업 작품 최우수상)

Lazy Parallel Kronecker Algebra, Yonsei University, Seoul, Korea

December 06, 2019

### • Capstone project 1st place (졸업 작품 최우수상)

Projection-Based AR Evacuation Simulator using Kinect for Windows V2, Yonsei University, Seoul, Korea

May 13, 2019

### • Honored Student Prize (학기 우등생)

Dongguk University, Seoul, Korea

July 09, 2015

### • Honored Student Prize (학기 우등생)

Dongguk University, Seoul, Korea

January 09, 2015

### • Honored Student Prize (학기 우등생)

Dongguk University, Seoul, Korea

July 07, 2014

## GRANT/SCHOLARSHIP

- **Graduate Student Research Assistant (재학조교장학금)**, 3,416,000 KRW (about 2,729 USD)  
Yonsei University, Seoul, Korea, Winter 2021
- **Teaching Assistant scholarship (재학조교장학금)**, 1,800,000 KRW (about 1,438 USD)  
Yonsei University, Seoul, Korea, Winter 2021
- **Teaching Assistant scholarship (재학조교장학금)**, 1,800,000 KRW (about 1,438 USD)  
Yonsei University, Seoul, Korea, Spring 2021
- **Graduate Student Research Assistant (재학조교장학금)**, 3,625,000 KRW (about 2,896 USD)  
Yonsei University, Seoul, Korea, Spring 2021
- **Internal Scholarship (계절학기조교장학금)**, 748,000 KRW (about 598 USD)  
Yonsei University, Seoul, Korea, Winter 2020
- **Graduate Student Research Assistant (재학조교장학금)**, 3,416,000 KRW (about 2,729 USD)  
Yonsei University, Seoul, Korea, Autumn 2020
- **Teaching Assistant scholarship (재학조교장학금)**, 1,800,000 KRW (about 1,438 USD)  
Yonsei University, Seoul, Korea, Autumn 2020
- **Fund scholarship (고등교육혁신팀사회혁신활동장학금 (연구지원) )**, 2,000,000 KRW (about 1,598 USD)  
Yonsei University, Seoul, Korea, Autumn 2020
- **Graduate Student Research Assistant (재학조교장학금)**, 3,416,000 KRW (about 2,729 USD)  
Yonsei University, Seoul, Korea, Spring 2020
- **Merit Scholarship(Academic) (성적우수장학 (학비감면) )**, 1,374,000 KRW (about 1,098 USD)  
Dongguk University, Seoul, Korea, Autumn 2015
- **A-Grade (전공 (학과) 수석장학)**, 3,206,000 KRW (about 2,561 USD)  
Dongguk University, Seoul, Korea, Autumn 2014

## SKILLS

<b>Programming</b>	C, C++, C#, CUDA, Python, PAPI, CMake
<b>Communication</b>	Korean (native), English (proficient)
<b>Other</b>	Github, Unity, Visual studio code, Linux(Ubuntu)