# Seongwon Yoon

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❂ *Gabriel-Yoon*

## Research Interests

**in-memory computing, deep learning accelerator, neuromorphic**

## Education

**2024 Fall -**  **Georgia Institute of Technology**, *Atlanta, GA, USA*
Major: Electrical & Computer Engineering, Advisor: Prof. Shimeng Yu

**2015 - 2022**  **Seoul National University**, *Seoul, Republic of Korea*
GPA : 4.11 / 4.30 | Major (Materials Science and Engineering) - 4.12 / 4.30 (4th place)
*Summa Cum Laude*, Leave of absence for military service (12/2016 - 09/2018)

**2012 - 2015**  **Korea Science Academy of KAIST**, *Busan, Republic of Korea*

## Experience

**07/2022 -**  **Imagoworks Inc.**, *Seoul, Republic of Korea*
**02/2023**  Software Engineer, Deep CAD team, R&D Institute
◦ Fine-tuning of generative models in products of Dentbird Solutions

**01/2022 -**  **Samsung Electro-Mechanics**, *Suwon, Republic of Korea*
**02/2022**  Research Intern at Materials Research Group, Central R&D Institute
◦ Analyze TEM data of ceramic dielectric in multi-layer ceramic capacitor (MLCC)

**03/2019 -**  **Neuromorphic Materials and Devices Laboratory(NMDL)**, *SNU*
**10/2021,**  Undergraduate Researcher (PI : Prof. Sangbum Kim)
**06/2023 -**  ◦ Established simulation environment for 1.4M 6T2R phase change memory synaptic
**Current**  array with 1.6K stochastic leaky-integrate and fire neurons based neuromorphic chip

**12/2018 -**  **Bio-inspired Materials Laboratory**, *SNU*
**02/2019**  Undergraduate Researcher (PI : Prof. Kitae Nam)
◦ Fabrication of carbon nanotube embedded Mg-based hydrogen generating catalyst

## Publications

Yugyeong Kang, Jaewon Park, Masatoshi Ishii, **Seongwon Yoon**, Uicheol Shin, Suyeon Jang, Minki Kim, Sangbum Kim, Solving Max-Cut Problem using Boltzmann Machine based on Phase Change Memory, *Submitted*, (2024)

Jungeun Park, **Seongwon Yoon**, Hannah Kim, Youngjun Kim, Woncheul Choi, Youngjun Choi, Hyungseog Yu, Uilyong Lee, Clinical validity and precision of deep learning-based Cone-Beam Computed Tomography automatic landmarking algorithm, *In revision as of Mar.2024*, (2023)

**Seongwon Yoon**, Uicheol Shin, Sangbum Kim, Solving Constraint Satisfaction Problem with Spiking Neural Network based on 1.4M 6T2R PCM Synaptic Array with 1.6K Stochastic LIF Neurons Neuromorphic Hardware, *The 28th Korean Conference on Semiconductors*, (2020)

## Selected Honors and Awards

09/2018 -
08/2020
**Jung-hun Foundation Scholarship**, *Jung-hun Foundation*
- Full tuition support for 2 years

09/2015 -
12/2016
**Eminence Scholarship**, *Seoul National University*
- Full tuition support for 1.5 years

21/10/2017
**Award Certificate from the Chief of Seoul Metropolitan Police Agency**, *Seoul Metropolitan Police Agency*
- Certificate for diligent service (Less than 1% of auxiliary policeman selected)

## Activities & Leadership

Summer 2020
**Stanford Summer Session 2020**
- Took 'Introduction to High Performance Computing Systems' (ME344) course at Stanford University with full tuition support from Seoul National University

2020–2021
**SNU Global Volunteers in Vietnam**, *Director*

2019–2021
**Gongwoo (Honor Society of College of Engineering at SNU)**

2019-2021
**SNU Swimming Club (SNUPOOL)**

2016-2017
**SNU Student Ambassadors**
- Served English protocol service to foreign faculty members

2016–2017
**SNU DMSE Basketball Team (MSEBA)**

12/2016 -
09/2018
**Korea Auxiliary Policeman**, *Korea National Police Agency*

## Teaching Experience

09/2019 -
02/2020
**Undergraduate Tutoring Program**, *SNU*
- Recruited & funded by Seoul National University Liberal Education Dept.
- Opened 'Electronic properties of Materials' class with the textbook "Principles of Electronic Materials and Devices, *S. O. Kasap*"

03/2016 -
12/2016,
03/2019 -
09/2020
**Tutoring Program at the College of Engineering**, *SNU*
- Recruited & funded by Seoul National University Materials Sci.& Eng. Dept.
- Opened 'Chemistry of Organic Materials', 'Experiments in Materials 2', 'Electronic properties of Materials' classes for total 5 semesters

## Skills & Languages

Programming C, C++, Python, Java, Go, Ruby, Matlab, ZWCAD, LaTeX

Languages English (fluent), Japanese (intermediate), Korean (native)

Test Scores TOEFL: 111, GRE: 159 (Verbal) / 169 (Quant) / 4.0 (Writing)