



# Sangin Bae

Research Assistant at University of Wisconsin-Madison

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## Skills

- DSP
- PSIM
- PLECS
- Pytorch
- Python
- PCB Design
- SIMULINK
- MATLAB

## Work experience

### Undergraduate Student Researcher

Hanyang University, Seoul

- . Train VGGNet for an object detection
- . Experience in Pytorch

June 2023  
August 2023

### Research Assistant

University of Wisconsin Madison, Madison

- . Develop Active Power Decoupling Modular Multilevel Converter (APD-MMC) control strategy
- . Develop Stability analysis method via Monodromy Matrix

August 2025  
Current

### Undergraduate Student Researcher

Chung-Ang University, Seoul

- . Develop 25kW modular Electric Vehicle (EV) fast charger
- . Utilize Wide-Band Gap (WBG) devices for a compact design - 25kW/1.5L
- . Design magnetic devices optimized to a high switching frequency - up to 500kHz
- . Implement Zero-Voltage Switching (ZVS) for a high efficiency - more than 95%

January 2024  
February 2025

## Education

### Doctor of Philosophy / Electrical and Computer Engineering

University of Wisconsin-Madison, Madison

August 2025  
Current

### Bachelor of Science / Electrical Engineering

Hanyang University, Seoul

January 2019  
January 2025