Cheol-Ho **Choi**

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PROFESSIONAL APPOINTMENTS

2023.01 – Present	SoC Design Engineer	Pangyo R&D Center, Hanwha Systems, Co., Ltd., Republic of Korea

EDUCATIONS

M.S. (2020 – 2022)	Electronic & Electrical Engineering	Kyungpook National University, Republic of Korea
B.S. (2013 – 2020)	Electronic Engineering	Yeungnam University, Republic of Korea

MILITARY SERVICE

2014 – 2016	Republic of Korea Army

HONORS and AWARDS

• NATIONAL BEST PAPER AWARDS

2021	Best Paper Award	KIPS Spring Conference
2018	Best Paper Award	KIEES Summer Conference

• INSTITUTE AWARDS

2019	Excellence Research Award	Korean Foundation of Women in Science, Engineering and Technology & Institution of Electronic and Information Engineers

• SCHOOL AWARDS

2021	Scholarship for Academic Excellence	Kyungpook National University ($4,200)
2020	Scholarship for Academic Excellence	Kyungpook National University ($2,153)
2019	Merit-based Scholarship	Yeungnam University ($2,446)
2019	Merit-based Scholarship	Yeungnam University ($1,500)
2019	Scholarship for Academic Excellence	Yeungnam University ($1,223)
2017	Scholarship for Academic Excellence	Yeungnam University ($1,223)
2013	Scholarship for Academic Excellence for Freshmen (within Top 10%)	Yeungnam University ($2,058)

RESEARCH PROJECT EXPERIENCE

*HSC: Hanwha Systems Company
*MOTIE: Ministry of Trade, Industry and Energy (Republic of Korea)
*NRF: National Research Foundation (Republic of Korea)

HSC   **Title: Night Vision System Design using Uncooled Infrared Thermal Camera Sensor**
Role: SoC Design Engineer
Year: 2023 – Present

HSC   **Title: AI-based Sniper Rifle System Development**
Role: SoC Design Engineer
Year: 2023 – Present

MOTIE   **Title: Research on System of Test Equipment for High Speed Memory (CK 8GHz DQ 16Gbps)**
Role: Researcher (for
Year: 2022 – 2022

NRF   **Title: Development for Public Safety Devices Considering Usability of On-site Police Officers**
Role: Researcher (for Machine Learning Processor Design)
Year: 2020 – 2022

NRF   **Title: An Embedded System for Real–Time Context Awareness of Smart Cars**
Role: Researcher (for Stereo Vision Processor Design)
Year: 2020 – 2022

CERTICATED PROGRAMS

Year	Program	Institution
2023	ISO26262:2018 Functional Safety Engineering Course: Automotive Foundation Level (FSE-AFL)	Det Norske Veritas (DNV)
2022	Deep-Learning Processing Unit Design and Implementation	IC Design Education Center (IDEC)
2022	HDL Code Generation and Verification using MATLAB	IC Design Education Center (IDEC)
2022	Automatically Code Generation Method for C and CUDA from MATLAB	IC Design Education Center (IDEC)
2022	Analog/Digital Integrated Circuit Theory and Design for Digital Circuit (RTL–to–GDSII)	IC Design Education Center (IDEC)
2022	Deep Learning Basic and Design	IC Design Education Center (IDEC)
2022	Cell-based Chip Design Flow for Samsung 28nm Fabrication	IC Design Education Center (IDEC)
2020	AMBA AXI and AXI-Stream Design and Verification	IC Design Education Center (IDEC)

TEACHING EXPERIENCE

Spring, 2022	SoC Design and Programming	Teaching Assistant (TA)
Spring, 2022	Electronic Engineering Clinic I	Teaching Assistant (TA)
Fall, 2021	Computer Architecture	Teaching Assistant (TA)
Spring, 2021	SoC Design and Programming	Teaching Assistant (TA)
Spring, 2021	Electronic Engineering Clinic I	Teaching Assistant (TA)
Fall, 2020	Electronic Engineering Clinic II	Teaching Assistant (TA)

PUBLICATIONS

*: Corresponding author

- **JOURNALS**

[J1] **<u>Cheol–Ho Choi</u>***, Hyun Woo Oh, Joonhwan Han, and Jungho Shin, "Cell-Based Refinement Processor Utilizing Disparity Characteristics of Road Environment for SGM-based Stereo Vision Systems," *IEEE Access*, **11**, pp. 138122–138140, Dec. 2023.

[J2] **<u>Cheol-Ho Choi,</u>** Junghwan Kim, Jongkil Hyun, Younghyeon Kim, and Byungin Moon, "Face Detection Using Haar Cascade Classifiers Based on Vertical Component Calibration," *Human–centric Computing and Information Sciences*, **12**(11), pp. 1–17, Mar. 2022.

[J3] Younghyeon Kim, Jiseok Ha, **<u>Cheol–Ho Choi</u>**, and Byungin Moon, "Filtering–based Method and Hardware Architecture for Drivable Area Detection in Road Environment Including Vegetation," *KIPS Transactions on Software and Data Engineering*, pp. 51–58, Jan. 2022.

[J4] **<u>Cheol-Ho Choi,</u>** Jae–Hyun Park, Ha–Neul Lee, and Jong–Ryul Yang, "Heartbeat detection using a Doppler radar sensor based on the scaling function of wavelet transform," *Microwave and Optical Technology Letters*, **61**(7), pp. 1792–1796, Jul. 2019.

- **CONFERENCES**

[C1] **<u>Cheol-Ho Choi</u>***, Joonhwan Han, Jeongwoo Cha, Jungho Shin, and Hyun Woo Oh, "Fast Object Detection Algorithm using Edge-based Operation Skip Scheme with Viola-Jones Method," in Proc. *6th IEEE International Conference on Artificial Intelligence Circuits and Systems (AICAS)*, Abu Dhabi, UAE, Apr. 2024, (Accepted)

[C2] **<u>Cheol–Ho Choi</u>*** and Hyun Woo Oh, "Disparity Refinement Processor Architecture utilizing Horizontal and Vertical Characteristics for Stereo Vision System," in *Proc. 26th Euromicro Conference on Digital System Design (DSD)*, Durres, Albania, Sep. 2023, pp. 220–226.

[C3] Hyun Woo Oh, **<u>Cheol–Ho Choi</u>**, Jeongwoo Cha, Hyunmin Choi, Joonhwan Han, and Jungho Shin, "An SoC FPGA-based Integrated Real-time Image Processor for Uncooled Infrared Focal Plane Array," in *Proc. 26th Euromicro Conference on Digital System Design (DSD)*, Durres, Albania, Sep. 2023, pp. 660–668.

[C4] **<u>Cheol–Ho Choi</u>**, Younghyeon Kim, Jiseok Ha, and Byungin Moon, "Haar Filter Hardware Architecture for the Accuracy Improvement of Stereo Vision Systems," in *Proc. International SoC Design Conference (ISOCC)*, Jeju, Republic of Korea, Oct. 2021, pp. 401–402.

[C5] Jongkil Hyun, Junghwan Kim, **<u>Cheol–Ho Choi</u>**, and Byungin Moon, "Hardware Architecture of a Haar Classifier Based Face Detection System using Skip Scheme," in *Proc. IEEE International Symposium on Circuits and Systems (ISCAS)*, Daegu, Republic of Korea, May 2021, pp. 1–4.