

# Chang-Hyeon An

DEEP LEARNING ENGINEER · COMPUTER VISION & MEDICAL IMAGE PROCESSING

Intelligent Computer Vision Software Laboratory (ICVSLab.), Department of Electronic Engineering, Yeungnam University 301-1 E22, 280 Daehakro, Gyeongsan, Gyeongbuk, 38541 Korea

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“The only person you should try to be better than is the person you were yesterday.”

## Education

### Yeungnam University

M.S. IN ELECTRONIC ENGINEERING

- Research Areas: Image generation, medical image processing (X-ray image), and semiconductor process predicting.
- Advisor: Prof. Hyun-Chul Choi

Gyeongsan, S.Korea

Mar. 2022 - Present

### Yeungnam University

B.S. IN ELECTRONIC ENGINEERING

- Cumulative GPA: 4.08 / 4.5 (Major: 4.21 / 4.5)

Gyeongsan, S.Korea

Mar. 2016 - Feb. 2022

## Skills

<b>Programming</b>	Python, PyTorch, Flask, Matlab
<b>Tools</b>	LaTeX, Notion, Github, WandB
<b>Languages</b>	Korean, English (OPIc: IH-Intermediate High)

## Projects

### Vertebral landmark detection on X-ray image

MEDICAL IMAGE PROCESSING

- Detect the corner points of the lumbar vertebrae and sacrum(S1).
- [Demo](#)

M.S.

Jan. 2022 - Present

### Predict Semiconductor Processing Result (Collaborated with POSTECH)

MACHINE LEARNING FOR SEMICONDUCTOR

- Predict the results of the semiconductor process.

B.S. - M.S.

Mar. 2022 - July 2023

### Pose Transfer

IMAGE GENERATION (GENERATIVE ADVERSARIAL NETWORK)

- In the human domain using a dataset consisting of lab members' videos. (Mar. 2021 - July. 2021)
- In the cartoon domain and the human domain using datasets consisting of [Mixamo](#) and [Fashion Dataset](#). (Nov. 2021 - July 2023)
- [Project Page](#)

B.S. - M.S.

Mar. 2021 - July 2023

### Motorcycle motion-based automatic illegal driving detecting system (Graduation Project)

OBJECT DETECTION & ACTION RECOGNITION

- Determine whether a detected motorcycle is illegally driven at a crosswalk.

B.S.

May 2021 - Nov. 2021

### Take Off Your Mask!

IMAGE GENERATION (GENERATIVE ADVERSARIAL NETWORK)

- Hire people for constructing a server and making an application, and develop an application to remove masks from a mask-wearing image.
- [Demo](#)

B.S.

Jan. 2021 - Apr. 2021

## Awards

### Naver Paper Award

ANNUAL SUMMER CONFERENCE OF THE INSTITUTE OF ELECTRONICS AND INFORMATION ENGINEERS (IEIE)

- Cartoon Pose Transfer
- [Image](#), [Paper](#)

M.S.

June 2022

## Graduation Project 1st Prize

ELECTRONIC ENGINEERING DEPARTMENT OF YEUNGNAM UNIVERSITY

- Automatic Motorcycle Illegal Driving Detection System
- [Image](#)

B.S.

Dec. 2021

## Patents

### FEATURE POINT ANALYSIS METHOD AND APPARATUS IN X-RAY IMAGE

PATENT APPLICATION

- Landmark Detection of Lumbar Vertebrae and First Sacral Vertebra on X-ray Images.
- 10-2023-0063653

S.Korea

May. 2023

### Apparatus and method for pose transformation

PATENT APPLICATION

- Cartoon Pose Transfer.
- 10-2022-0106683

S.Korea

Aug. 2022

### Method Of Detecting ILLEGAL DRIVING AND APPARATUS THEREOF

PATENT APPLICATION

- Determine whether a detected motorcycle is illegally driven at a crosswalk.
- 10-2021-0177678

S.Korea

Dec. 2021

## Publications

### INTERNATIONAL

#### GLCANet: Glocal Context-Aware Vertebral Landmark Detection Network on X-ray Image

CHANG-HYEON AN, JUN-SOO JANG, AND HYUN-CHUL CHOI.

- Image and Vision Computing, Under Review.

Sep. 2023

#### Cartoon Pose Transfer

CHANG-HYEON AN AND HYUN-CHUL CHOI.

- Neurocomputing, vol. 554, 126619, DOI: [10.1016/j.neucom.2023.126619](https://doi.org/10.1016/j.neucom.2023.126619).

Oct. 2023

#### Accurate and Reliable Parameter Optimization of Regression Neural Network for Semiconductor Technology Development

HYEOK YUN\*, CHANG-HYEON AN\*, HYUNDONG JANG, KYEONGRAE CHO, AND JEONG-SIK LEE, SEUNGJOON EOM, CHOONG-KI KIM, MIN-SOO YOO, HYUN-CHUL CHOI, AND ROCK-HYUN BAEK (\*EQUAL CONTRIBUTION)

- Advanced intelligent systems, 2300089, DOI: [10.1002/aisy.202300089](https://doi.org/10.1002/aisy.202300089).

July, 2023

#### Part Affinity Fields and CoordConv for Detecting Landmarks of Lumbar Vertebrae and Sacrum in X-ray Images

CHANG-HYEON AN, JEONG-SIK LEE, JUN-SOO JANG, AND HYUN-CHUL CHOI.

- MDPI Sensors, vol. 22 (22), 8628, DOI: [10.3390/s22228628](https://doi.org/10.3390/s22228628).

Nov. 2022

#### A Review of Multi-Modal Learning from the Text-Guided Visual Processing Viewpoint

UBAID ULLAH, JEONG-SIK LEE, CHANG-HYEON AN, HYEONJIN LEE, SU-YEONG PARK, ROCK-HYUN BAEK, AND HYUN-CHUL CHOI.

- MDPI sensors, vol. 22 (18), 6816, DOI: [10.3390/s22186816](https://doi.org/10.3390/s22186816).

Sep. 2022

### DOMESTIC

#### Cartoon Pose Transfer

CHANG-HYEON AN AND HYUN-CHUL CHOI.

- Annual Summer Conference of The Institute of Electronics and Information Engineers (IEIE)-[link](#)

Jeju, S.Korea

June, 2022

#### Pose Transfer using AdaIN and Generative Adversarial Network

CHANG-HYEON AN, JEONG-SIK LEE, SU-YEONG PARK, AND HYUN-CHUL CHOI.

- Annual Summer Conference of The Institute of Electronics and Information Engineers (IEIE)-[link](#)

Jeju, S.Korea

July, 2021

Experience

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June 2023	<b>Attend</b> , Conference on Computer Vision and Pattern Recognition(CVPR)	Vancouver, Canada
Oct. 2022	<b>Attend</b> , European Conference on Computer Vision(ECCV)	Tel Aviv, Israel
July 2022	<b>Attend</b> , IEEE WORLD CONGRESS ON COMPUTATIONAL INTELLIGENCE(WCCI)	Padua, Italy
July 2020 -	<b>Research Intern</b> , Intelligent Computer Vision Software Laboratory(ICVSLab)	Yeungnam
Feb. 2022		University