

# 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

Gyeongsan, S.Korea

M.S. IN ELECTRONIC ENGINEERING

Mar. 2022 - Present

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

### Yeungnam University

Gyeongsan, S.Korea

B.S. IN ELECTRONIC ENGINEERING

Mar. 2016 - Feb. 2022

- Cumulative GPA: 4.08 / 4.5 (Major: 4.22 / 4.5)

## 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

M.S Student

MEDICAL IMAGE PROCESSING

Mar. 2022 - Present

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

### Machine Learning for Semiconductor (Collaborated with POSTECH)

B.S Student - M.S Student

PREDICT SEMICONDUCTOR PROCESSING RESULT

Oct. 2021 - Feb. 2023

- Predict the results of the semiconductor process.

### Pose Transfer

B.S Student - M.S Student

IMAGE GENERATION (GENERATIVE ADVERSARIAL NETWORK)

Mar. 2021 - May 2022

- 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 - May. 2022)

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

B.S Student

OBJECT DETECTION & ACTION RECOGNITION

May 2021 - Nov. 2021

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

### Take Off Your Mask!

B.S Student

IMAGE INPAINTING & IMAGE GENERATION (GENERATIVE ADVERSARIAL NETWORK)

Jan. 2021 - Apr. 2021

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

## Awards

### Naver Paper Award

M.S Student

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

June 2022

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

## Graduation Project 1st Prize

ELECTRONIC ENGINEERING DEPARTMENT OF YEUNGNAM UNIVERSITY

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

B.S Student

Dec. 2021

## Patents

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

PATENT APPLICATION

- The method of detecting vertebral landmark using part affinity fields and CoordConv.

S.Korea

Apr. 2023

### Apparatus and method for pose transformation

PATENT APPLICATION

- Cartoon Pose Transfer.

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.
- Graduation Project

S.Korea

Dec. 2021

## Publications

### INTERNATIONAL

#### 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

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

- Advanced intelligent systems. Under Revision.

Feb. 2023

#### Cartoon Pose Transfer

CHANG-HYEON AN AND HYUN-CHUL CHOI.

- Neurocomputing. Under Revision.

Feb. 2023

### DOMESTIC

#### Cartoon Pose Transfer

CHANG-HYEON AN AND HYUN-CHUL CHOI.

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

Seoul, 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](#)

Seoul, S.Korea

July 2021

## Experience

July 2020 - **Research Intern**, Intelligent Computer Vision Software Laboratory(ICVSLab)

Feb. 2022

Yeungnam

University

July 2022 **Attend**, IEEE WORLD CONGRESS ON COMPUTATIONAL INTELLIGENCE(WCCI)

Padua, Italy

Oct. 2022 **Attend**, European Conference on Computer Vision(ECCV)

Tel Aviv, Israel