Min Jung. **Shin**

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Education

Kwangwoon University — *Mar. 2016 - Exp. Feb. 2021*

Major in Electronics & Communications Engineering — *Seoul, S.Korea*

- Major GPA of 4.14/4.5
- Total GPA of 4.00/4.5

Work Experience

Real Time Signal Processing Lab — *Undergraduate Research Students*

Kwangwoon University — *Jul. 2019 - Jul.2020*

- Designed multi-modal deep learning model using image signals and biometrics signals

Electronics and Telecommunications Research Institute(ETRI) — *Intern*

Artificial Intelligence Research Laboratory

Intelligent Robotics Ulsan Research Section of Intelligent Robotics Research Division — *Jan. 2019 - Feb.2019*

- Implemented DORE-MTCNN (Tensorflow version1)
- Preprocessed image data and reviewed face detection model paper

Real Time Architecture Lab — *Undergraduate Research Students*

Kwangwoon University — *Dec. 2017 - Dec.2018*

- Video processing tasks using embedded boards
- Implemented digital logit circuits with Verilog

Publication

Detectable Object-Sizes Range Estimation Based Multi-Task Cascaded Convolutional Neural Networks in the Vehicle Environment — *3rd Author*

2019 IEEE 90th Vehicular Technology Conference (VTC 2019-Fall)

- Propose the Detectable Object-sizes Range Estimation algorithm (DORE) to estimate the range of detectable face sizes through specific information in the vehicle environment.
- Achieve half of the processing time (MTCNN: about 32ms / DORE-MTCNNN: about 16 ms) with the same accuracy (95.98% on the basis of the NTHU-DDD dataset) compared to MTCNNN.

Awards & Honors

Award

2018	**Finalist,** 10th Engineering Design Camp - Control of Drone	*S.Korea*
2017	**Incentive Award,** Portfolio Competition	*Kwangwoon Univ*

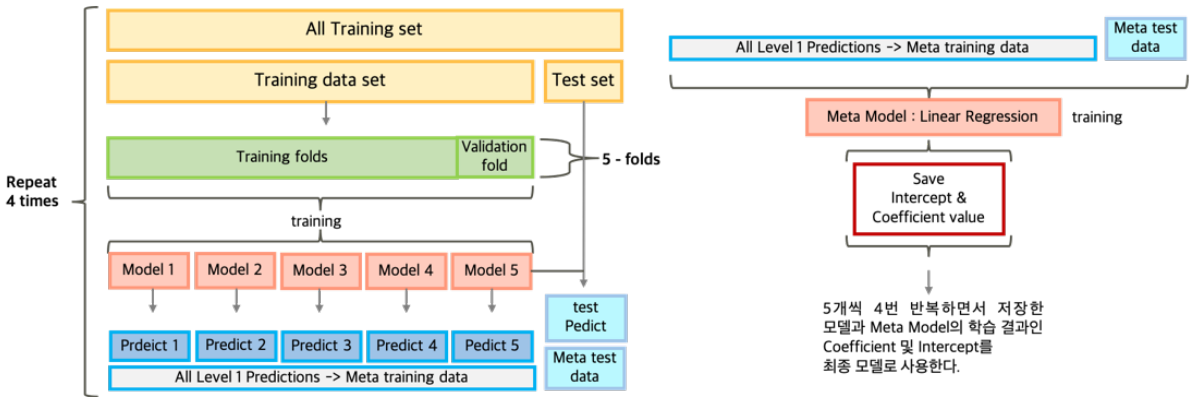
Honors

2020	**Academic Scholarship,** awarded from KB to students with high achievements throughout the total GPA	*S.Korea*
2019	**Academic Scholarship,** awarded to students with high achievements throughout the semester	*Kwangwoon Univ*
2018	**Academic Scholarship,** awarded to students with high achievements throughout the semester	*Kwangwoon Univ*
2017	**Academic Scholarship,** awarded to students with high achievements throughout the semester	*Kwangwoon Univ*

Project Experience

Home-shopping Sales Prediction

Agu. 2020 - Sep. 2020



Overview

- Predict future sales with home-shopping data for one year in 2019 and external data such as weather, economic index, etc.
- Achieved RMSE score 23 with CV based stacking model

Roles & Responsibilities

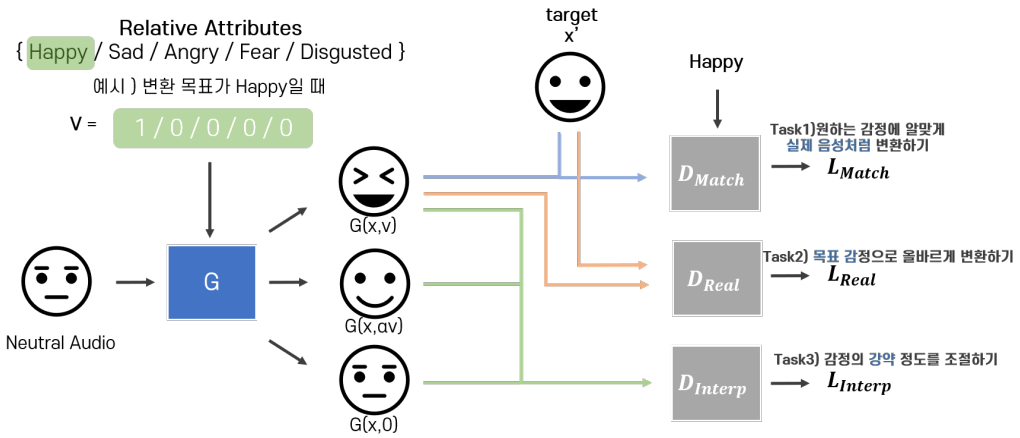
- Feature engineering about NLP
- Implemented deep learning stacking model & Auto-encoder for recommendation system

Related Link

- Code / Report

Emotional Voice Conversion using GAN

Mar. 2020 - Jul. 2020



Overview

- Generate a new voice by selecting the target emotion and degree for the target emotion
- By extracting the fundamental frequency and spectral envelop of voice data, train multi domain and interpolation with RelGAN
- Implement web page and application

Roles & Responsibilities

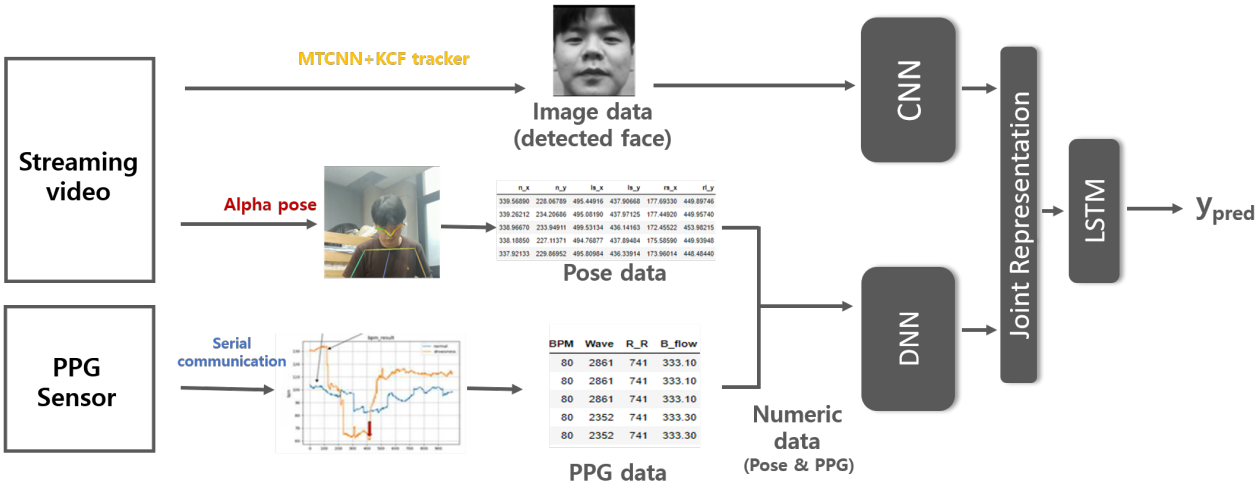
- Preprocessed speech data
- Reviewed generative model paper
- Implemented a model that applies WORLD vocoder and CycleGAN VC2 to AttGAN and RelGAN (Tensorflow version 1)

Related Link

- Presentation video / Code

Driver Drowsiness Detection using Video and PPG-sensor

Aug. 2019 - Jun. 2020



Overview

- Detecte driver drowsiness condition by video and biometric signals in real time
- Detecte driver face using MTCNN&KCF-trakcer and estimate pose using Alpha-pose in real time
- Extract PPG signal through serial communications with Ubpulse360

Roles & Responsibilities

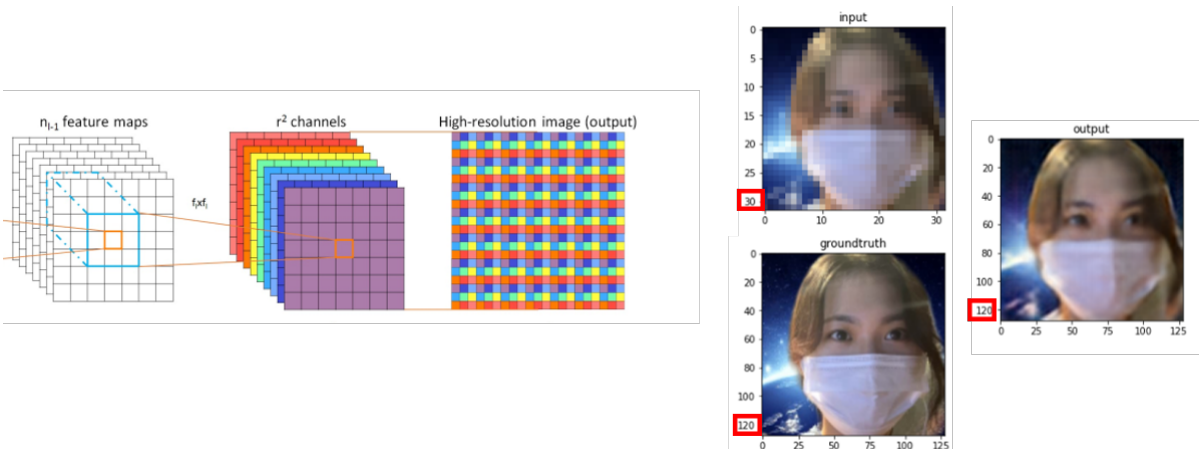
- Team Leader & Main Coder
- Implemented detection model of the driver's face with the MTCNN and used the KCF tracker for frame with no object detected
- Designed and implemented a multi-modal deep learning model (Tensorflow version 2)

Related Link

- Presentation video

Super Resolution

Jun. 2020



Overview

- Shallow CNN-based super resolution using Sub-pixel convolution layer without using GAN for fast training and fast inference time
- Implement total architecture by Tensorflow version 2

Related Link

- Presentation video / Code

Side Projects

Author

- Controllable Video Generation - Present
- Smart Signal Lamp System using Object Detection(YOLO) -2019 Summer
- Electronic Circuit Project - -2018 - 2019

Extracurricular Activity

Google Machine Learning Bootcamp

Oct. 2020 - PRESENT

Member

- Complete Andrew Ng's class and study about Cloud Server.

Generative Model Seminar

Sep. 2020 - PRESENT

Seminar Leader

- Study about VAE,GAN,self-supervised learning,few-shot,etc. - Tech Blog

Big data & AI study club "Tobigs"

Jan. 2020 - PRESENT

13th Member

- Study about Machine learning & Deep learning
- Tobigs' Official Homepage Link
- 12&13th member Gitbook Link
- 12&13th member Audio Seminar Link
- 13&14th Google-site Link

DITTO

Mar. 2016 - Feb. 2017

Member

- Programming club of the department of electronics & communications engineering, Kwang-Woon university

Research Intetest

Generative Model

create a new data using Deep Generative Model

- A research on the controllable&conditional generation
- A research on the image&video generation
- A research on the cross domain

Image Restoration

Denoising, Super Resolution

- A research on the removing noise from image
- A research on the enhancement image resolution

Human Analysis

Face & Pose

- A research on the face detection,tracking,recognition
- A research on the pose estimation,tracking

Skills

Programming	C, Python, Verilog, Assembly
Deep Learning	Tensorflow, Keras, Pytorch
Data Analysis	Numpy, Pandas, Matplotlib, seaborn, scikit-learn
Platform	Jetson TX2, Jetson Xavier, ARTIK, Raspberry-Pi, DE1-SoC, Arduino