

Jiun Bae

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Machine Learning engineer, interested in solving real-world problems.

EDUCATION

Hanyang University

M.S. in Computer Science, Advisor: Jongwoo Lim

Seoul, Korea
Mar. 2019 – Feb. 2021

Hanyang University

B.S. in Computer Science

Seoul, Korea
Mar. 2015 – Feb. 2019

Yonsei University (Mirae Campus)

B.S. in Computer Engineering, Withdrawal

Wonju, Korea
Mar. 2014 – Aug. 2014

EXPERIENCE

NCSOFT

Machine Learning Engineer, Technical Research Personnel

Game AI Lab. Motion AI
Feb. 2021 –

- 3D Facial Animation Generation, implement speech to landmark model based on Deep Learning.
- Designed and developed a deep learning model training framework based on pytorch-lightning for team needs to increase ML research productivity and management.
- Motion Capture data (Vicon Cara, Dynamixyz) preprocess and alignment pipelining.

Naver

Machine Learning Engineer, Intern

Clova
Jul. 2020 – Aug. 2020

- Depth estimation by structure from motion using camera parameters

Naver Webtoon

Machine Learning Research, Intern

Research
Sep. 2018 – Feb. 2019

- Developed annotation tool on 2d bounding box supports various type tagging, model inference to live data and dataset management with custom query types.
- Visual QA Workshop ICCV2019 Submission.
Implement multi-modal network for baseline of visual QA tasks and verify the task problem validation with data.

Mapianist

Software Engineer Intern

Jul. 2017 – Aug. 2018

- Optical music sheet recognition and Android app programming

SW Maestro 7th

Awarded as top team

Jul. 2017 – Aug. 2018

- DeepCheck: Face detection attendance check service
- Memento: Automatic magazine creation service
- Awarded as top teams presented at the “100+ Conference” hosted by Ministry of Science and ICT.

PUBLICATIONS

- [1] **Jiun Bae** and Jongwoo Lim. “**Object detection in fisheye lens environment**”. In: *Image Processing and Image Understanding* 32nd Workshop (2020).
- [2] Gitaek Kwon, **Jiun Bae**, and Jongwoo Lim. “**Object counting using object detection and re-identification in video sequence**”. In: *Image Processing and Image Understanding* 32nd Workshop (2020).
- [3] Jongbin Ryu, **Jiun Bae**, and Jongwoo Lim. “**Collaborative Training of Balanced Random Forests for Open Set Domain Adaptation**”. In: *CoRR* abs/2002.03642 (2020). arXiv: 2002.03642.

PROJECTS

- Fisheye object detection and tracking CVLab, Jun. 2019 – Feb. 2020
 - Designed and developed a tool for ground-truths 3d annotation boxes from a large FOV fisheye lens environment.
 - Optimized object detection and tracking in large FOV fisheye lens environments using proposed dilated warping convolution which stack of dilated convolutions and warping layers.
 - Improved inference speed using model quantizations and frameworks(ONNX, TensorFlow Lite, Libtorch) for use in embedded systems such as NVIDIA Jetson™.
- Webtoon Annotation Tool Naver Webtoon, Sep. 2018 – Feb. 2019
 - Designed and developed of annotation tools for on-demand collection of raw data from new domains
 - Implement quick model serving pipeline for visualize comparison to ground-truths and see the difference with newly collected.
 - Implement analysis tool for cross-validation between annotators and tracking productivity for check the difficulty.
 - Implemented to collect tags corresponding to various query types that can be transformed.
- MariaDB Scalable Lock Manager ITE4065 at Hanyang University, 2018
 - Remove performance degradation of InnoDB storage engine which using global lock for transaction record managing using replace lock manager to lock-free linked list.
 - Improve performance by distinguish physical-free, logical-free in garbage collection phase and re-allocate used transaction using re-useable object pool.
- Memento: all information about that person SW Maestro, 2017
 - Designed and developed a scalable crawling service that can crawl multiple types of documents.
 - Word vector embedding and clustering continuous data
 - Implement document embedding system that vectorize document using doc2vec, cluster it based on unique events in time sequence and able to quickly merge with appended data.
 - Implement named entity recognition, emotion recognition and morphological analysis
- DeepCheck: Deep learning-based auto face recognition attendance check SW Maestro, 2017
 - Improve the model based on YOLO, collected data and fine-tuned with hyper-parameter tuning the model to recognize faces in large-scale, low-resolution crowded environment.
 - Improved the model based on VGG Face using few-shot learning to recognize detected faces as each user.
 - As a technical challenge, made a cross-platform app based on React Native.
 - Developed API server using Flask, serve lightweight model inference.

SCHOLARSHIPS AND AWARDS

- ACM ICPC 16th place 2016
- Top start-up certification SW Maestro 7th 2017
- Google Machine Learning Challenge Korea 5th place 2017

OTHER EXPERIENCE AND ACTIVITIES

- **Teaching Assistant**, Advanced Computer Vision 2019 – 2020
 - Basic programming knowledge and how to use the library.
 - Deep learning basics and model implementation from scratch with numpy.
 - Implementation of Object Classification, Detection, and Tracking.
 - At **Samsung System LSI, Samsung Advanced Institute of Technology and Samsung Human Resource Development Institute.**