Sukmin Kim

https://smkim7-kr.github.io

EDUCATION

The University of Hong Kong *Sept. 2017 - Jul. 2023*
- **CGPA: 3.69 / 4.3 (Major CGPA: 3.79 / 4.3)** *Pokfulam, Hong Kong SAR*
- Graduated from Bachelor of Engineering in Computer Science with **First Class Honors**
- A+ in Software Engineering, Robotics, Probability & Statistics, Applied Deep Learning, Calculus & ordinary differential equations, Linear algebra, Discrete Mathematics

North London Collegiate School Jeju *Sept. 2013 - Jun. 2017*
- **International Baccalaureate: overall score 42 / 45** *Jeju Island, South Korea*
- Achieved level 7 in all HL Subjects: Mathematics, Physics and Economics
- IGCSE (7 A* including Mathematics, Additional Mathematics and Biology)

PUBLICATION

DeepAccident: Motion and Accident prediction Benchmark for V2X Autonomous Driving [paper]
Tianqi Wang, **Sukmin Kim**, Wenxuan Ji, Enze Xie, Chongjian Ge, Junsong Chen, Zhenguo Li, Ping Luo
AAAI24

RESEARCH EXPERIENCES

HKU MMLab *Sept. 2022 - Jan. 2024*
Part-time Research Assistant (Supervisor: Prof. Ping Luo) *Pokfulam, Hong Kong SAR*
- Assisted research project on autonomous driving, proposing metrics, post-processing raw data, visualizing results, and propose sampling method for future motion predictions
- Investigated several Bird's Eye View (BEV) and Vehicle-to-Everything (V2X) methods on autonomous driving tasks, including sensor fusion and PV-to-BEV unprojection methods

URFP (Undergraduate Research Fellowship Programme) [poster] *Jul. 2022 - Aug. 2022*
Supervisor: Prof. Ping Luo *Pokfulam, Hong Kong SAR*
- Experimented with a method to improve unsupervised domain adaptation approaches using masked image modeling
- Assisted research project on accident-oriented autonomous driving
- Participated URFP poster session

WORK EXPERIENCE

Korean Army 2nd Corps *Sept. 2019 - Apr. 2021*
CERT (Computer Emergency Response Team) Squad Leader *Chuncheon, South Korea*
- Monitored 24/7 for potential cyber attack including virus, port scan and malware
- Controlled several Linux servers and military security systems such as UTM and NAC
- Handled potential network vulnerabilities in the military systems

COMPETITIONS

Naver Clova AI Rush 2022 *Jul. 2022 - Aug. 2022*
Finalist (top 70) with 800 USD cash prize
- Solved image classification task to classify Seoul landmarks
- Solved recommendation task to recommend music to users of the Naver music platform

Naver Clova AI Rush 2021 *May 2021*
Top 150 participants with 600 USD cash prize
- Solved hierarchical image classification task to classify shopping images into three levels of categories with limited computational resources

VOLUNTARY EXPERIENCES

Psuedo Lab [study page] *Mar. 2024 – Present*
3DGS/NeRF Paper Review Team Member *Remote*

- Reviewed and discussed published papers on 3D Gaussian Splatting and NeRF
- Presented trending papers including Gaussian surfels, Vidu4D, Dynamic 3dgs [ppts] [recordings]

AI Robotics KR [study page] *Jan. 2024 – Mar. 2024*
3D Vision study Team Leader *Remote*
- Reviewed and discussed papers and code related to computer vision
- Presented two topics: BEV perception [ppt] [tutorial] and Compositional NeRF [ppt]

Psuedo Lab *Jul. 2021 – Nov. 2021*
Computer Vision Paper Reading Team Member *Remote*
- Reviewed and discussed papers and code related to computer vision
- Presented three papers: AdaMatch, Self-Damaging Contrastive Learning and Meta Pseudo Labels [videos]

Awards / Certificates

HKU Foundation Entrance Scholarship 2017, 2018, 2021, 2022
Received half tuition scholarship (9,400 USD every year) for the whole duration of undergraduate study

Research Internship Award 2023

Certificate of Excellence from Hugging Face Deep Reinforcement Learning Course 2023

Deep Learning Specialization from Coursera 2021

Dean's Honors List from HKU Engineering 2018

Advanced Standing from HKU Engineering 2017

Skills

Core Python, Modern C++, Linux, Git, Docker LaTeX

Computer Vision OpenCV, PCL, Open3D, Eigen

Machine Learning CUDA, OpenMP, Numpy, Pandas, Pytorch, Matplotlib, Scikit-Learn, Tensorflow, Keras, Jax

Frameworks OpenMMLab, WandB, nerfstudio, gsplat

Language English (*fluent*), Korean (*native*)
- GRE: Verbal (159, 81%), Quantitative (170, 96%), Writing (4.0, 54%)

Selected Projects

Spatialai-tutorial [github] *Feb. 2024 - Present*
- Tutorial codes for diverse topics in Spatial AI - SLAM, ROS2, 3D Vision, OpenMP, CUDA, Docker, and others
- Investigate code analysis in popular Github libraries - mmdetection3d, nerfstudio, gsplat - based on tutorials

Whisk(e)y Classifier [report] [github] *Feb. 2022 - Apr. 2022*
- Built an application to detect whiskey from self-collected and labeled whiskey datasets using MMdetection framework
- Optimized training with WandB logging, hyperparameter tuning and data quality improvement

Deep Learning paper study [github] *Apr. 2021 - Nov. 2021*
- Reviewed deep learning research papers and codes from different fields of interest including self-supervised learning and 3D vision

AdaMatch-pytorch [github] *Jul. 2021 - Aug. 2021*
- Implemented code of *AdaMatch: A Unified Approach to Semi-Supervised Learning and Domain Adaptation* in Pytorch
- Investigated recent breakthroughs in semi-supervised learning