# Sukmin Kim

*https://smkim7-kr.github.io*

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**PUBLICATION**

DeepAccident: Motion and Accident prediction Benchmark for V2X Autonomous Driving
*AAAI24*
*50+ citations (Google Scholar)*
Tianqi Wang, **Sukmin Kim**, Wenxuan Ji, Enze Xie, Chongjian Ge, Junsong Chen, Zhenguo Li, Ping Luo

**RESEARCH EXPERIENCE**

**HKU MMLab**                                                                    *Sept. 2022 - Sept. 2023*
*Part-time Research Assistant (Supervisor: Prof. Ping Luo)*          *Pokfulam, Hong Kong SAR*

- Developed comprehensive metrics for autonomous driving performance, implementing a large-scale, 313 GB data post-processing pipeline that structured and visualized sensor data
- Investigated Bird's Eye View (BEV) and Vehicle-to-Everything (V2X) approaches for autonomous driving tasks, including advanced sensor fusion methods, improving a motion prediction metric by 7%
- Designed future sampling methods to enhance robustness in motion prediction algorithms

**URFP (Undergraduate Research Fellowship Programme)**          *Jul. 2022 - Aug. 2022*
*Supervisor: Prof. Ping Luo*                                              *Pokfulam, Hong Kong SAR*

- Contributed to a novel accident-oriented driving framework, influencing safer design approaches in autonomous systems
- Participated in the URFP poster session [Poster]

**WORK EXPERIENCE**

**Korean Army 2nd Corps**                                                *Sept. 2019 - Apr. 2021*
*CERT (Computer Emergency Response Team) Squad Leader*          *Chuncheon, South Korea*

- Managed a 24/7 cybersecurity monitoring system, detected and mitigated 10+ weekly cybersecurity threats, including viruses and port scans
- Administered Linux servers and implemented robust configurations on security appliances (UTM, NAC), resulting in a 30% reduction in intrusion attempts and enhanced overall system resilience
- Identified and resolved 20+ critical network vulnerabilities per month, significantly improving military infrastructure security and reducing system downtime risks

**EDUCATION**

**The University of Hong Kong (HKU)**                                *Sept. 2017 - Jul. 2023*
*Bachelor of Engineering in Computer Science, First Class Honors*          *Pokfulam, Hong Kong SAR*

- **CGPA:** 3.69 / 4.3 (Major CGPA: 3.79 / 4.3)
- Achieved A+ in Software Engineering, Robotics, Probability & Statistics, Applied Deep Learning, Calculus & Ordinary Differential Equations, Linear algebra, and Discrete Mathematics
- Awarded **HKU Foundation Entrance Scholarship** (2017–2022) for academic excellence

**North London Collegiate School Jeju**                          *Sept. 2013 - Jun. 2017*
*International Baccalaureate Diploma*                              *Jeju Island, South Korea*

- **IB Score:** 42 / 45, with Level 7 in Higher Level Mathematics, Physics, and Economics
- **IGCSE:** 7 A*s, including Mathematics and Additional Mathematics

**COMPETITIONS**

**Naver Clova AI Rush 2022**                                        *Jul. 2022 - Aug. 2022*
*Finalist (Top 70), awarded $800*

- Engineered a CNN-based image classification pipeline to identify Seoul landmarks, improving accuracy by 50% over the baseline, leveraging techniques such as data augmentation and gradient accumulation

- Built a recommendation system using real user data from a music platform, optimizing personalization strategies to improve user engagement

**Naver Clova AI Rush 2021** *May 2021*

*Top 150, awarded $600*
- Developed a hierarchical image classification model to categorize shopping images into three-level categories under strict computational constraints

VOLUNTARY EXPERIENCE

**Psuedo Lab** [Study Page] *Mar. 2024 – Present*

*3DGS/NeRF Paper Review Team Member* *Remote*
- Participating in discussions on 3D Gaussian Splatting and Neural Radiance Fields research
- Presenting cutting-edge papers such as Gaussian surfels and Vidu4D, fostering knowledge-sharing within the community [Slides] [Videos]

**AI Robotics KR** [Study Page] *Jan. 2024 – Mar. 2024*

*3D Vision study Team Leader* *Remote*
- Directed a weekly study group on 3D vision topics with 20+ active members, conducting 12 weekly sessions and enhancing the participants' understanding
- Reviewed research papers, lecture videos, and open-source implementations
- Presented and documented two core subjects: BEV perception and compositional NeRF

**Pseudo Lab** *Jul. 2021 – Nov. 2021*

*Computer Vision Paper Reading Team Member* *Remote*
- Analyzed and discussed computer vision papers, including AdaMatch, Self-Damaging Contrastive Learning, and Meta Pseudo Labels [Videos]
- Delivered presentations and facilitated Q&A sessions, strengthening group understanding of state-of-the-art methods

AWARDS

**HKU Foundation Entrance Scholarship** 2017, 2018, 2021, 2022
Awarded half-tuition scholarship ($9,400/year) based on academic merit

**Research Internship Award** 2023
Granted $1,300 for successful Undergraduate Research Fellowship Programme participation

**Dean's Honors List, HKU Engineering** 2018

**Advanced Standing, HKU Engineering** 2017

SKILLS

**Programming & Tools** Python, Modern C++, Docker, Linux, Git, LaTeX

**Deep Learning & Robotics** PyTorch, NumPy, Pandas, OpenCV, CUDA, OpenMP, Matplotlib, JAX, Eigen, ROS2, TensorFlow, Keras, PCL, Open3D

**Frameworks** OpenMMLab, WandB, nerfstudio, gsplat

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

SELECTED PROJECTS

**Spatialai-tutorial** [Github] *Feb. 2024 - Present*
- Developing tutorial modules on spatial ai topics, including SLAM, ROS2, 3D Vision, OpenMP, and CUDA

**Whisk(e)y Classifier** [Report] [Github] *Feb. 2022 - Apr. 2022*
- Created a whiskey detection system, achieving 99% Mean Average Precision (mAP) on a dataset of over 2,500 self-collected and labeled images.