Junghwan Yim

Graduate Student Researcher

Data Engineer solving problems with having broad data domain knowledge, development skills and deep understanding of AI, mathematical, or statistical modeling skills. Having experiences in analyzing, modeling, visualizing, and deploying various typed data as well as building the data pipeline, web, app service in both academic and industry fields. Having experiences leading teams or communities as a president or a project manager and achieving remarkable achievement with teams. Learn fast and solve problems by applying it by sharing what I learn with the team, thus maximizing the team's productivity.

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EDUCATION

University at Buffalo — 2016 - 2022
Master of Science in Physics
Bachelor of Science in Computational Physics
Bachelor of Science in Computer Science

State University at New York in Fredonia — 2013 - 2016
Bachelor of Science in Physics with Pre-Law
Bachelor of Science in Business Administration (Music Industry)

CERTIFICATES

Data Intensive Computing — **University at Buffalo**

Probabilistic Graphical Model — **Stanford University (Coursera)**

AWARDS

Meritorious Service Medal — **Republic of Korea Personnel Command**
- Awarded in K-Startup Contest by designing and developing ingredient managing system and recipe recommend system from the commander of ROK Personnel Command, two-star rear admiral.

Meritorious Service Medal — **Republic of Korea Cyber Operation Command**
- Awarded for contribution and excellency by software development from the commander of ROK Cyber Operation Command, two-star rear admiral.

SKILLS & COMPETENCIES

Research | ETL | NLP | Image Processing | Machine Learning | Deep Learning | Reinforcement Learning | C | C++ | Python | Java | Javascropt | R | Scala | SAS | MATLAB | SQL | No-SQL | numpy | pandas | seaborn | scikit-learn | OpenCV | nltk | Keras | Pytorch | TensorFlow | ROS | Elasticsearch | Spark | Hadoop | Airflow | Docker | Kubernetes | AWS | Azure | GCP | MapReduce | HIVE | MySQL | MongoDB | Teraform | Ansible

WORK EXPREIENCE

Graduate Student Researcher
01/2021 - present
University at Buffalo
Buffalo, NY

Model for Elevation Map Prediction and Synthesis
- Generated dynamic occupation maps and elevation maps distinguishing static object or dynamic object on the road from KITTI Dataset and ROS grid map package.
- Predicted the next frames of the maps with sensor fusion of IMU sensor data at vehicles and BEV elevation map from LiDAR data
- Reduced computational cost by merging two different maps than merging two differnt elevation maps from vehicles.

Post-Processing for Static Object Detection (Traffic Sign Detection)
- Composed the knowledge graph of static object on the road with leading object detection team in Autonomous Vehicle Laboratory of the University at Buffalo (CAVAS).
- Trained Yolo and RCNN models for traffic sign detection based on the knowledge graph and Mapiliary Traffic Sign Dataset, and the best model among models recorded 70% accuracy.
- Achieved stable and lighter detection performance using Kalman-Filter and SLAM algorithm and calibration model and composed ROS package mapping detected the traffic signs and the distance with the traffic sign into HD (High Digital) Map with collaborating the CAVAS members.

Data Scientist / Software Developer
05/2019 - 12/2020
Republic of Korea Cyber Operation Command
Seoul, Republic of Korea

Developing Intelligence Operation System
- Developed an entire real-time stream data-driven intelligence system (Data Pipeline) collecting data and assisting analysis using TensorFlow Server, Apache Ecosystem (Hadoop, Kafka, and Spark) and ELK stack with the operation and development team.
- Developed Natural Language Processing, Image Processing, Malware detection modules using Machine Learning, Deep Learning, and Reinforcement Learning to analysis the collected data with TensorFlow, Keras, and Pytorch.
- Led development team and reflected requirements with non-engineering team
- Awarded the Meritorious Service Medals for contribution and excellency by Software Development from Corp Commander and Commander of ROK Cyber Operations Command, two-star rear admiral.

Designing Inventory Management and Recipe Recommend System
- Designed and developed demo for a data-driven recipes recommendation system for offering customized recipes based on the TensorFlow server for object detection in refrigerator of clients and personal information of the clients using TensorFlow Server, Apache Ecosystem (Hadoop, Kafka, and Spark) and ELK stack with Azure Recognition service.
- Awarded the Meritorious Service Medal in K-Startup Contest from Commander of ROK Personnel Command, two-star rear admiral.

PROJECTS

Tastie, Mobile Application
- Developed and operated a mobile application recommending restaurants based on the keywords to avoid suffering searching good restaurants, which in total reached 10K+ users in 2 months.
- Built a data pipeline with AWS EMR, EC2, Elasticsearch, Kafka and Terraform

Korean Society Webpage
- Developed Korean Society Webpage for Koreans in Buffalo, New York by leading Korean Students in various majors with GCP and Firebase.
- Led development team and got insights by analyzing users with survey, interviews and aggregated metrics from Google Analytics.
- Made 300 user increments in a semester by grouping people and providing optimized services and contents for each sub-groups.