

JOONG HO KIM

352-451-5263 | joonghk574@gmail.com | <https://github.com/jkim574>

QUALIFICATIONS

Enthusiastic Computer Science professional with a strong background in machine learning, and computer vision, data science. Committed to continuous learning and staying current with AI advancements to drive innovation and societal impact.

EDUCATION

Master of Science in Computer Science

May 2025

California State University, San Bernardino

- GPA: 4.0 / 4.0

Bachelor of Science in Computer Science

Dec 2022

University of Wisconsin-Madison

- Dean's List (Spring 2022)

WORK EXPERIENCE

University of California, Los Angeles

Funded research project by the US National Alliance for Water Innovation

Sep 2024 – Current

- Developed Self-Organizing Maps (SOMs) to analyze nonlinear correlations among key water treatment sensor variables, enabling early detection of anomalies and sensor drift
- Created visualizations of system states using SOMs, enabling detection of sensor anomalies and their roles in operational modes like startup and shutdown
- Built Reinforcement Learning (RL) based Model Predictive Control (MPC) frameworks that use SOM insights to adjust operational parameters, improving system reliability and extending cleaning intervals

University of California, Riverside

DS-PATH Summer Fellowship Program

Summer 2024

- Led an 8-week project titled "Exploring Data Fusion Techniques in Automated LiDAR Labeling" developing a pipeline that parses raw LiDAR data (ROSBAG) and merges bounding-box predictions from multiple 3D detection models
- Converted ROSbag outputs into KITTI-compatible datasets, visualize fused detections with open3d, and generate massive inference CSV files—streamlining the workflow from raw point clouds to final merged predictions
- Implemented ensembling methods via OpenPCDet, combining overlapping detections to reduce false positives and achieve near-"ground truth" labeling quality

California State University, San Bernardino

Instructional Student Assistant (ISA)

Fall 2024

- Assisted professors in grading coursework for Introduction to Artificial Intelligence and Operating Systems, providing timely feedback and support to students

PROJECTS

Cooperative Dataset Labeling for Autonomous Vehicles

May 2024 – Current

- Built a multi-sensor labeling pipeline for cooperative perception, fusing bounding boxes from LiDAR and camera detections across multiple vehicles
- Aligned LiDAR and camera frames via precise extrinsic calibration and transformation matrices, ensuring accurate cross-sensor overlays
- Employed Weighted Boxes Fusion (WBF) to merge overlapping detections, leveraging confidence scores and sensor-specific weights for highly accurate bounding boxes
- Reduced annotation time by automating model predictions and incorporating targeted human validation, accelerating large-scale dataset creation
- Improved reliability of multi-vehicle detection in occlusion-heavy scenarios, informing downstream tasks like multi-agent tracking and occupancy mapping

Dynamic Systems Model of Attention during Meditation

Jan 2024 – Current

- Developed a Python-based dynamic systems model to simulate attentional processes during a breath-counting meditation-like task, providing insights into attention dynamics and task performance
- Compared simulated metrics (e.g., accuracy, reset frequency) against human performance data, refining decay parameters and error probabilities
- Enhanced the model's explanatory power on cognitive processes by iteratively aligning simulated outputs with empirical findings from psychology research

CONFERENCE AND PRESENTATIONS

Clapper, J., Bhatt, V., Kim, J., Lopez Diaz, M., Anaya, A., De Leon, D., Koshino, H., "Tracking attention during breath counting meditation: A dynamic systems approach" WPA, In Preparation (2025)