Yimeng Li

Residence/domicile: Omaha, NE

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CS Ph.D. specializing in machine learning, robotics, and computer vision, with a proven track record of impactful research and publications.
Experienced Senior Software Engineer adept at developing large-scale systems.
Collaborative team player committed to fostering a respectful and innovative work environment.

Skills

- Proficient in Python, C++, Java, C, SQL
- Proficient with version control systems: Git
- Proficient of machine learning frameworks: PyTorch, Numpy, Pandas, Tensorflow, AWS, Pytorch3d, OpenCV, Scikit-learn, SciPy, Pandas, Keras, Numpy, Docker
- Proficient of machine learning models: CNNs, RNNs, GNNs, Transformers, GANs, Logistic regression, Ensemble learning, Random Forest, ANN, SVM, Naive Bayes, K-means clustering, and PCA.
- Familiar with full-stack development: HTML, CSS, JS, React

Work Experience

Senior Software Engineer Jan 2024 - Present
Schnackel Engineers Omaha, Nebraska

- Led the development of end-to-end algorithms to enhance CAD automation, incorporating extensive floating-point math and data structure manipulation for efficient solutions in C#.

Software Engineering Intern May 2021 - August 2021
United Imaging Intelligence Boston, Massachusetts

- Developed an end-to-end model to estimate 3D human joint locations in the world frame from images captured by cameras at four predefined viewpoints on the human36M dataset.

Research Intern June 2020 - August 2020
Honda Research Institute, US San Jose, California

- Conducted research on BEV object detection using RGB image and frontal depth image from stereo images on the KITTI dataset.
- Developed a novel approach that aimed at adapting to multiple 2D object detection inputs and different depth estimation methods for accurate BEV object detection in complex driving scenarios.

Research Intern May 2018 - August 2018
AFRL Mathematical Modeling and Optimization Institute Shalimar, Florida

- Conducted research on aerial object detection using Fast R-CNN in PyTorch, trained and fine-tuned models on the xView dataset.
- Optimized hyperparameters, performed data preprocessing and analyzed experimental results to achieve state-of-the-art performance.

Research Assistant to Prof. Jana Kosecka September 2016 - Present
Computer Vision and Robotics Lab Department of Computer Science, George Mason University

- Conducted in-depth research utilizing advanced deep-learning techniques to enable robots to navigate and interact with household objects in residential environments autonomously.

- Proposed and implemented a novel exploration approach using learning-augmented model-based planning for time-limited robotic exploration in previously unseen environments.
- Developed a framework utilizing unmanned aerial systems (UASs) for monitoring fall hazard prevention systems near unprotected edges and openings in high-rise buildings.

Teaching Assistant September 2016 - Present
Department of Computer Science George Mason University

- Instructed lab sessions for 'Intro to Python' and 'Intro to C' courses, guiding students in understanding programming concepts, debugging code, and completing assignments.
- Redesigned assignments for the 'Intro to AI' course, incorporating new concepts to enhance students' understanding of AI and setting up an auto-grading environment to streamline grading.
- Developed project assignments for image multi-class classification and object detection for the 'Deep Learning for Computer Vision' course, including creating the skeleton code framework and providing clear instructions to students.

Software Engineer June 2014 - July 2016
Third Research Institute of Ministry of Public Shanghai, China

- Designed and implemented an image classification system in C++ that selects candidate images from the TRECVID dataset, a widely used benchmark dataset for multimedia content retrieval.
- Developed the system to work on distributed systems, leveraging parallel processing and distributed computing techniques for efficient and scalable image classification.

Education

PhD in Computer Science 2016 - 2023
George Mason University, Fairfax, VA
Master of Science in Computer Science 2016 - 2018
George Mason University, Fairfax, VA
Bachelor of Engineering in Software Engineering 2010 - 2014
East China Normal University, Shanghai, China

Other Experience

Reviewer 2020 - Present

- Served as reviewer for journals: IEEE-Intelligent Systems, IEEE-RAL, IEEE-TITS
- Served as reviewer for conferences: ICRA, IROS, CVPR, ICCV, WACV, ACCV, PR

Personal

- Work Authorization: STEM OPT. Will need H1B sponsorship.
- Languages: English (Professional), Chinese (Native)

Publications

- Yimeng Li and Arnab Debnath and Gregory J. Stein and Jana Kosecka. *Learning-Augmented Model-Based Planning for Visual Exploration.* IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), 2023
- Yimeng Li and Arnab Debnath and Gregory J. Stein and Jana Kosecka. *Comparison of Model Free and Model-Based Learning-Informed Planning for PointGoal Navigation.* CoRL 2022 Workshop on Learning, Perception, and Abstraction for Long-Horizon Planning, 2022.

- Yimeng Li and Jana Kosecka. *Uncertainty Aware Proposal Segmentation for Unknown Object Detection*. Proceedings of the IEEE/CVF Winter Conference on Applications of Computer Vision (WACV), 2022.
- Yimeng Li and Jana Kosecka. *Learning View and Target Invariant Visual Servoing for Navigation*. IEEE International Conference on Robotics and Automation (ICRA), 2020.