Khiem Vuong

Phone: (612)-256-9499
Website: khiemvuong.com
Email: vuong067@umn.edu
GitHub: github.com/kvuong2711

EDUCATION

University of Minnesota, Twin Cities — Minneapolis, MN
B.S. Computer Science (Honors Program) — *Expected May 2021*

- **Major GPA:** 4.0/4.0 | **Cumulative GPA:** 3.978/4.0.
- **Relevant Coursework:** Computer Vision, Machine Learning, Deep Learning, Linear Optimization, Applied Linear Algebra, Computer Graphics, Data Structures and Algorithms, Operating Systems, Theory of Statistics.

PUBLICATIONS

[1] T. Do, **K. Vuong**, S. I. Roumeliotis, and H. S. Park, "Surface Normal Estimation of Tilted Images via Spatial Rectifier", in *European Conference on Computer Vision (**spotlight presentation**)*, Springer, 2020, pp. 265–280.

[2] K. Sartipi, T. Do, T. Ke, **K. Vuong**, and S. I. Roumeliotis, "Deep Depth Estimation from Visual-Inertial SLAM", in *Proc. of the IEEE/RSJ International Conference on Intelligent Robots and Systems*, Virtual Conference, Oct. 2020.

[3] T. Ke, T. Do, **K. Vuong**, K. Sartipi, and S. I. Roumeliotis, "Deep Multi-view Depth Estimation with Predicted Uncertainty", *arXiv preprint arXiv:2011.09594*, under review at the *IEEE Int. Conf. on Robotics and Automation*, 2021.

WORK EXPERIENCE

Undergraduate Research Assistant — Minneapolis, MN
Multiple Autonomous Robotic Systems (MARS) Lab, University of Minnesota — *Sep. 2019 – Present*
Advisor: Prof. Stergios Roumeliotis

- Research focus: *visual scene understanding* (surface normal/depth estimation).
- Develop a novel deep neural architecture which leverages a spatial rectifier to estimate surface normals of *tilted* images.
- Develop a system that performs 3D scene reconstruction by estimating and fusing dense depth estimates from a sequence of images using deep neural networks.

Software Development Intern — Chicago, IL
Enfusion Systems — *Jun. 2019 - Aug. 2019*

- Developed a JUnit dynamic regression testing framework for Portfolio Management System that massively increased testing coverage for trade compliance rules and position rebalancing calculator through unit and integration tests.
- Optimized and maintained a data pipeline which faciliates data transfer between local database and Google BigQuery that allows Visual Analytics System to provide real-time, instant access to on-demand portfolio analysis reports.

Undergraduate Research Assistant — Minneapolis, MN
GroupLens Research Lab, University of Minnesota — *Jun. 2018 - May 2019*
Advisor: Prof. Lana Yarosh

- Applied machine learning methods to analyze data of more than 16 million users provided by *CaringBridge*.
- Built a probabilistic framework to help understand unstructured texts *(sentiment analysis)* and quantify the causal impacts of user's writings *(causal inference analysis)* by employing Natural Language Processing (NLP) models.

TECHNICAL SKILLS

- **Languages:** Java, Python, C/C++, MATLAB, OCaml.
- **Developer Tools**: Git, Docker, Travis-CI, PyCharm, IntelliJ, Google Cloud Platform.
- **Libraries**: PyTorch, NumPy, pandas, Matplotlib, Numba, OpenCV, NLTK, gensim, spaCy.

HONORS AND AWARDS

- Spotlight Presentation (top 5% of submissions) in *European Conference on Computer Vision 2020* (acceptance rate 27%).
- Undergraduate Research Opportunities Program (UROP) Scholarship, University of Minnesota (Spring 2020).
- Global Excellence Scholarship, University of Minnesota (Fall 2017, upon admission).