Kien C. Huynh

kchuynh@cs.stonybrook.edu 631-413-0852
linkedin.com/in/kien-huynh-05b73637/

Education

Stony Brook University Stony Brook, NY
Ph.D. Computer Science (GPA 3.9) expected December 2023

Ho Chi Minh City University of Technology Ho Chi Minh City, Vietnam
M.E. Computer Science (Valedictorian) Apr 2017

Ho Chi Minh City University of Technology Ho Chi Minh City, Vietnam
B.E. Computer Science Oct 2014

Research Interests

- Computational geometry
- Machine learning

Experience

Stony Brook University Stony Brook, NY
PhD Candidate Jun 2019 – Present
Advisor: Joseph S. B. Mitchell – Email: joseph.mitchell@stonybrook.edu

- Delivery planning and path finding with a collaborating fleet of heterogeneous agents: finding efficient solutions for a group of agents to cooperate and make a delivery close to the optimal time. Proved theoretical results for an efficient approximation algorithm in polygonal domain.
- 2D domain searching and scanning with a moving line segment: computing a fast schedule for two searchers, who are connected by a segment, to thoroughly scan a domain or look for a target. Proved the NP-hardness of the problem and provided a constant factor approximation algorithm.
- Budgeted watchman route: finding a tour in a polygonal domain so that an agent can see as much as they can within a given time budget.

Advanced Computing Lab, HCMUT Ho Chi Minh City, Vietnam
Research Assistant May 2015 – Jun 2018

- Vision-based traffic density estimation with heavy emphasis on chaotic situations: doing an empirical survey on computer vision methods to predict the density of vehicles in heavily crowded traffic videos, each frame could have more than a hundred motorbikes. Experiments were done using a wide range of machine learning techniques such as: convolutional neural network, random forest, least-squares support vector machine, etc.
- Medical image segmentation: modifying the Fully Convolutional Network model to perform image segmentation and accurately label different organs in abdominal CT images.
- Handwritten mathematical expression recognition: detecting handwritten math symbols using a CNN model and identifying the correct expression to translate the image into latex codes.

GraphicsMiner Lab Ho Chi Minh City, Vietnam
Machine Learning Engineer Sep 2016 – Jun 2018

- Natural image captioning using deep learning: implementing a state-of-the-art computer vision method to generate Vietnamese descriptions from images.

VietAI Ho Chi Minh City, Vietnam
Lecturer Jun 2017 – Jun 2018

- Course: Foundation of Machine Learning.

Stony Brook University Stony Brook, NY
Teaching Assistant Sep 2018 – Dec 2019

- Courses: Computational geometry, Introduction to Objected Oriented Programming.

Skills

Technical skills: Python, Pytorch, C++, OpenCV, OpenGL.

Publications

1. **Chi-Kien Huynh**, Joseph S. B. Mitchell, *Sweeping a polygon with a variable-length line segment*, FWCG 2022.
2. **Chi-Kien Huynh,** Joseph S. B. Mitchell, *Package delivery using handoffs among collaborating heterogeneous agents*, SOCG: Young Research Forum, 2021.
3. Giang-Son Tran, **Chi-Kien Huynh**, Thanh-Sach Le, Tan Phuc Phan, Khanh Ngoc Bui, *Handwritten mathematical expression recognition using convolutional neural network*, CRC, IEEE 2018.
4. **Chi-Kien Huynh**, Thanh-Sach Le, and Kazuhiko Hamamoto, *Convolutional neural network for motorbike detection in dense traffic*, ICCE, IEEE, 2016.
5. Thanh-Sach Le, **Chi-Kien Huynh**, *A Unified Framework for Motorbike Counting and Detecting in Traffic Videos*, ACOMP, IEEE, 2015.
6. Thanh-Sach Le, Chi-Kien Huynh, *Human-crowd density estimation based on Gabor filter and cell division*, ACOMP, IEEE, 2015.
7. **Huynh Chi Kien**, Dung Ngoc Thai, Sach Thanh Le, Nam Thoai, Kazuhiko Hamamoto, *A robust method for estimating motorbike count based on visual information learning*, ICGIP, SPIE, 2014.

Awards and Achievements

- Excellence as a Teaching Assistant (Dept. of Computer Science, Stony Brook University, 2019)
- VEF 2.0 Program recommended candidate (2017)
- Kanden-SS scholarship (Kanden SS Co., Inc & HCMUT, 2016)
- Award of Excellence (HCMUT, 2017)