Chuong **Huynh**

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Education

University of Maryland, College Park — ***MD, U.S.A.***
Ph.D. in Computer Science - GPA: 3.88/4.0 — *2021 – 2025*

University of Science – Vietnam National University — ***Vietnam***
Bachelor of Science in Honors Program – Information Technology — *2014 – 2018*

Publications (Selected)

CoLLM: A Large Language Model for Composed Image Retrieval — ***CVPR 2025***
Chuong Huynh, Jinyu Yang, Ashish Tawari, Mubarak Shah, Son Tran, Raffay Hamid, Trishul Chilimbi, Abhinav Shrivastava

Composing Object Relations and Attributes for Image-Text Matching — ***CVPR 2024***
Khoi Pham, Chuong Huynh, Ser-Nam Lim, Abhinav Shrivastava

MaGGIe: Masked Guided Gradual Human Instance Matting — ***CVPR 2024***
Chuong Huynh, Seoung Wug Oh, Abhinav Shrivastava, Joon-Young Lee — *46k views on AK*

SimpSON: Simplifying Photo Cleanup With Single-Click Distracting Object Segmentation — ***CVPR 2023***
Chuong Huynh, Yuqian Zhou, Zhe Lin, Connelly Barnes, Eli Shechtman, Sohrab Amirghodsi, Abhinav Shrivastava — *Photoshop features*

Progressive Semantic Segmentation — ***CVPR 2021***
Chuong Huynh, Anh Tran, Khoa Luu, Minh Hoai — *132 cites, 118 stars*

Research Experience

Perception & Intelligence Lab, UMD - *Advisor: Prof. Abhinav Shrivastava* — ***MD, U.S.A.***
04/2022 – recent

Image-Text Matching: Designed a Textual Scene Graph Embedding to improve alignment between images and richly attributed text (↑4-8 RSUM) (CVPR'24).

Scene Graph for Robotics: Parsed scene to scene graph for robot perception and planning.

Cell Counting: Built a two stage approach for cell counting in pathological images.

Multimodal Retrieval: Developed a universal system for any-to-any multimodal retrieval.

Samsung Research America (Vision Intelligence) - *Research Intern* — ***CA, U.S.A.***
Working on Vision-Language Model — *05/2025–recent*

Amazon.com (Rufus MM) - *Applied Scientist Intern* — ***CA, U.S.A.***
Composed Image Retrieval with LLM *(Mentor: Dr. Jinyu Yang, Dr. Son Tran, Prof. Mubarak Shah):* Developed a strong baseline using a novel self-supervised training method to extend LLM retrieval capabilities (1 CVPR'25). — *05/2024 – 12/2024*

Adobe Inc. - *Research Intern* — ***Remote, U.S.A.***

Interactive Segmentation *(Mentor: Dr. Yuqian Zhou):* Class-agnostic visual instance retrieval using a single user click and attention mechanisms *(2 patents, 1 CVPR'23).* — 06/2022 – 11/2023

Image and Video Matting *(Mentor: Dr. Joon-Young Lee):* Optimize matting models using weak segmentation masks (↑6x speed, ↓75% mem) *(1 patent, 1 CVPR'24)*.

VinAI Research - *AI Resident* — ***Vietnam***

High-resolution Semantic Segmentation *(Mentor: Prof. Minh Hoai):* ntegrated global and local context across scales for high-resolution segmentation (1 CVPR'21). — *07/2019 – 01/2021*

Industrial Experience

VinAI Research - *AI Research Engineer* — ***Vietnam***

Lane Detection for Autonomous Driving: (Mentor: Prof. Khoa Luu): Integrate segmentation to reduce false detection in extreme cases. — *02/2021 – 07/2021*

Smart Data Annotation Toolkit (Mentor: Dr. Thanh Tran): Improve memory/time/accuracy of Segmentation Models with noisy in-house data.

Vehicle Counting and Tracking (Mentor: Prof. Minh Hoai): Detected and tracked various vehicles from CCTV footage to analyze urban traffic flow on Vietnam streets.

Honors & Awards

2025 **CVPR Doctoral Consortium**
2021 **Dean's Fellowship** – Ph.D. UMD
2020 **Top 2%** (19/1317) in FGVC Challenge, CVPR Workshop
2020 **Third prize** (3rd/217) in Ho Chi Minh City – AI City Challenge, Vietnam
2019 **Bronze medal** – top 7% (196/2931) in APTOS Kaggle Competition
2019 **Best poster presentation** in Southeast Asia Machine Learning School, Indonesia

Activities

2021-now Reviewer at ICCV, ECCV, ACCV, CVPR, NeurIPS, TPAMI
2018-2024 Lecturer at VietAI (non-profit teaching organization promoting AI education in Vietnam)
2019 Instructor of "Get-In-Tech series: AI & ML" at U.S. Embassy, Hanoi, Vietnam

Skill Sets

Languages: Python (Proficient), C/C++ (libtorch, TensorRT), Java, Javascript.
Frameworks: LLM, Huggingface, PyTorch, Scikit-Learn, Numpy, OpenCV, Docker, AWS, GCP, Linux.