Vuong Ho

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vvuonghn

Education

University of Arkansas — Arkansas, USA
M.S in Computer Science. Advisor: Prof. Susan Gauch. GPA: 4.0/4.0 (until present) — Jun 2023 - May 2025 (expected)

University of Information Technology — HCMC, Vietnam
B.S in Computer Science. GPA: 3.4/4.0 — Agu 2016 - Nov 2020

Research Interests

- Autonomous Driving Perception: Surround View Monitor (SVM), Auto Parking, Free-space segmentation, 2D/3D Object Detection, Driving Monitoring System, Calibration
- 3D Scene Understanding: 3D Point Cloud Object Detection and Segmentation, Depth estimation, Path Planning, VSLAM
- 3D Generation: 3D Reconstruction, text-to-3D, images-to-3D, NeRF, 3D Gaussian Splatting, Diffusion model, LLMs

Experience

- **VinAI** — HCMC, Vietnam
  Research Engineer — Mar 2021 - Jun 2023
  - Implemented a 360 surround view monitoring system from four cameras around a car and perspective projection from fisheye image (front/rear/left/right views, wheel views) which deployed success on VinFast E34. Technical based on camera intrinsic, extrinsic calibration, 3D object model, blending image
  - Implemented calibration algorithms: Intrinsic camera, Extrinsic fisheye cameras-vehicle coordinate system(Ego), LiDAR-Camera, auto-calibration
  - Implemented algorithms for mapping pixel index between Fisheye ↔ Perspective image. Estimate distance between vehicle coordinate system(Ego) to object based on calibration
  - Implemented algorithms free-space segmentation/detection based on cameras (BEV)
  - Auto Parking: Support build Occupancy Grid Map (OGM) from four cameras, researched path planning method
  - Researched and applied CV, ML/DL techniques to develop 3DOD from LiDAR Point Cloud

  AI Research Resident — Apr 2020 - Mar 2021
  - Mentors: Dr. Binh-Son Hua
  - Research topic: 3D Point Cloud Segmentation, 3D Medical Image Segmentation. Proposed a 3D Point Cloud method for 3D voxel medical image segmentation dataset
- **VCCorp** — HCMC, Vietnam
  AI Engineer — Jun 2019 - Apr 2020
  - Implemented a classification system using RNN/LSTM model that can predict the category, detect depraved content/violence in videos on social media
  - Implemented a VIP (very important person) detection system on videos
- **FPT Software** — HCMC, Vietnam
  AI Intern — Mar 2017 - May 2018
  - Implemented a 3D medical Image Segmentation model, analysis, processing, and visualization of 3D image data
  - Implemented a object detection model for broken products when passing on conveyor belts in industrial plants
- **Personal project: Self-driving car** — HCMC, Vietnam
  - Implemented of mini-self-driving cars, running in real environment Using machine learning to detect lanes, traffic signs, and obstructions, thereby making decisions about speed, and steering angle

Publications

- **FG-CXR: A Radiologist-Aligned Gaze Dataset for Enhancing Interpretability in Chest X-Ray Report Generation**
  Trong-Thang Pham, **Ngoc-Vuong Ho**, Nhat-Tan Bui, Thinh Phan, Hien Nguyen, Brijesh Patel, Donald Adjeroh, Gianfranco Doretto, Anh Nguyen, Carol Wu, and Ngan Le. *ACCV 2024*
- **Surround view monitoring system and method**
  Dai Thanh Phan, Phuc Thien Nguyen, Chi Thanh Nguyen, Duc Chan Vu, Truong Trung Tin, Nguyen Van Thang, Dang Quang Nguyen, **Ngoc-Vuong Ho**, Hai Hung Bui. *Patent WO2024057060A1, WIPO (PCT) 2022*
- **Point-Unet: A Context aware Point-based Neural Network for Volumetric Segmentation**
  Ngoc-Vuong Ho, Tan Nguyen, Gia-Han Diep, Ngan Le, Binh-Son Hua. *MICCAI 2021*

Honors & Awards

- CVPR Registration Award — 2024
- MICCAI 2021 Student Travel Award — 2021
- HackerRank Certificates Problem Solving (Basic) — 2020
- Southeast Asia Machine Learning School in Indonesia — 2019
- The Mini-course "Statistical learning: bagging, boosting, SVM, introduction to neural network" — 2019
- Top 8/876 in the Digital race Driverless in 2017 -2018 by FPT Corporation — 2018

Technical Skills

Programming: C/C++, Python, MATLAB, CUDA(basic), Parallel computing
Frameworks & Tools: Pytorch, TensorFlow, Unix/Linux, OpenCV, OpenGL(Basic), LATEX, Docker, ROS, Blender, Git
Database: SQL, ETL Data Modeling, Kafka
Coding/Algorithm: Checkout my LeetCode