Vuong Ho

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vvuonghn

Education

University of Arkansas — Arkansas, USA
M.S in Computer Science. 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

- 3D Scene Understanding: 3D Point Cloud Object Detection and Segmentation, Depth estimation, ADAS/AD Perception
- 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
  - 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
  - Research topic: 3D Point Cloud Segmentation, 3D Medical Image Segmentation
  - Proposed a 3D Point Cloud method for 3D voxel medical image segmentation dataset
  - Mentors: Dr. Binh-Son Hua

- **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

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
  Asian Conference on Computer Vision (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
  Medical Image Computing and Computer Assisted Intervention (MICCAI 2021)

Projects

- **Self-driving car** — Aug 2017
  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

- **Document Layout Analysis** — Jul 2018
  Implemented a segmentation model for the layout of the Vietnamese, and English document images (with respect to the magazine). Identify and localize areas of text, tables, charts and images along with their respective descriptions

- **Segmentation of Lungs from Chest X-Ray** — Mar 2019
  Implemented an automatic lung segmentation systems for chest X-ray images. The system helps assess the health status of patients. Achieved an accuracy of over 98%

Honors & Awards

- Fully Funded 2 years Masters Scholarships at UARK 2023
- 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 10/176 in the Document Layout Analysis - Cinnamon AI Marathon 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