

Trong-Tung Nguyen

Ph.D. Student in Computer Science · Data Science & AI Institute

Whiting School of Engineering

Johns Hopkins University

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📍 Baltimore, MD, USA

— Research

My past research focused on efficient generative models for visual generation: image editing, inpainting, and personalization. My current research explores physics-informed video generation models, which enable physics realism in generated videos, and 3D physics simulation, which enables dynamic physics on static 3D representations.

— Education

Johns Hopkins University, Whiting School of Engineering, USA

Ph.D. Student in Computer Science

2026 – present

Advisor: Anand Bhattad

Research Topics: Physics-informed Video Generation, Physics-informed 3D Generation & Efficient Visual Generation Model

Ho Chi Minh University of Science, Vietnam National University, Ho Chi Minh City, Vietnam

B.Sc., Computer Science — Advanced Program in Computer Science (APCS)

2017 – 2021

GPA: 3.92/4.0, Math 4.0/4.0 — **Top 1%** among graduated students

— Research Experiences

Qualcomm AI Research (formerly VinAI Research), AI Research Resident

2023 – 2026

Mentors: Dr. Anh Tran, and Prof. Cuong Pham

Singapore Management University, Visiting Researcher

Jan 2023 – Aug 2023

Mentor: Prof. Guansong Pang

VinUni-Illinois Smart Health Center, Research and Teaching Assistant

2021 – 2022

Mentors: Prof. Minh Do, and Prof. Wray Buntine

— Selected Honors and Awards

Outstanding Reviewer, **Top 5% of Reviewers**, CVPR

2026

Best AI Resident Award, Qualcomm AI Research Residency Program

2025

Travel Support Award, CVPR

2025

Best Presentation Award, The 10th International Symposium on Information and Communication Technology (SoICT)

2019

Finalist, National Codewar Competition, top 5, hosted by FSoft

2019

Global Software Talent Scholarship, FPT Software

2019

Runner-up, UNESCO Hackathon, Fossasia

2018

Silver Medal, 30/4 Southern Vietnam Mathematics Olympiad

2016

Silver Medal, 30/4 Southern Vietnam Mathematics Olympiad

2015

Third Prize, Mathematics Competition for Gifted High School Students, Ho Chi Minh City

2014

— Publications and Selected Preprints

* denotes equal contribution

9. PowerSim: Differentiable Physics Simulation and Rendering with Power Diagrams

Trong-Tung Nguyen, Anand Bhattad

ON ARXIV 2026

8. FracGen: Learning How Objects Stretch and Tear with Physics-Informed Video Generation

Trong-Tung Nguyen, Jiahan Zhang, Anand Bhattad

ON ARXIV 2026

7. InverFill: One-Step Inversion for Enhanced Few-Step Diffusion Inpainting

Duc Vu*, Kien Nguyen*, Trong-Tung Nguyen*, Ngan Nguyen*, Phong Nguyen, Khoi Nguyen, Cuong Pham, Anh Tran

CVPR 2026

6. SwiftPie: Lightning-fast Subject-driven Image Personalization via One step Diffusion

Huy Duong*, Trong-Tung Nguyen*, Cuong Pham, Anh Tran, Khoi Nguyen, Minh Hoai

CVPR 2026 (FINDINGS)

5. SwiftEdit: Lightning Fast Text-guided Image Editing via One-step Diffusion

Trong-Tung Nguyen, Quang Nguyen, Khoi Nguyen, Anh Tran, Cuong Pham

CVPR 2025

4. **FlexEdit: Flexible and Controllable Diffusion-based Object-centric Image Editing**
Trong-Tung Nguyen, Duc-Anh Nguyen, Anh Tran, Cuong Pham
[ON ARXIV 2024](#)
3. **Multi-stream Fusion for Class Incremental Learning in Pill Image Classification**
Trong-Tung Nguyen, Hieu H. Pham, Phi Le Nguyen, Thanh Hung Nguyen, Minh Do
[ACCV 2022](#)
2. **iTASK — Intelligent Traffic Analysis Software Kit**
Minh-Triet Tran, Tam V. Nguyen, Trung-Hieu Hoang, Trung-Nghia Le, Khac-Tuan Nguyen, Dat-Thanh Dinh, Thanh-An Nguyen, Hai-Dang Nguyen, Xuan-Nhat Hoang, **Trong-Tung Nguyen**, Viet-Khoa Vo-Ho, Trong-Le Do, Lam Nguyen, Minh-Quan Le, Hoang-Phuc Nguyen-Dinh, Trong-Thang Pham, Xuan-Vy Nguyen, E-Ro Nguyen, Quoc-Cuong Tran, Hung Tran, Hieu Dao, Mai-Khiem Tran, Quang-Thuc Nguyen, Tien-Phat Nguyen, The-Anh Vu-Le, Gia-Han Diep, Minh Do
[CVPR 2020 WORKSHOPS](#)
1. **Visual Assistant for Crowdsourced Anomaly Event Recognition in Smart City**
Minh-Tri Ho, **Trong-Tung Nguyen**, Hieu Dao, Minh-Triet Tran
[SoICT 2019](#)

— Academic Services

Reviewer

- CVPR (25, 26), ECCV (24, 26), NeurIPS (26), ICLR (27), AAAI (25, 26)

Teaching Assistant

- Intro to AI (VinUni — Spring 2022), Learning-based Vision (Johns Hopkins University — Spring 2026)