

# Vuong (Dustin) Nguyen

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## SUMMARY

CS Ph.D. candidate with strong experience in Computer Vision (CV), Machine Learning (ML), and Deep Learning (DL). A strongly collaborative and self-motivated team player/leader. Well-equipped with critical thinking and problem solving.

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## EDUCATION

### University of Houston

*Ph.D. in Computer Science | GPA: 3.84*

Houston, TX

*Aug 2022 – Dec 2025 (Expected)*

### Hanoi University of Science and Technology

*B.S. in Applied Mathematics | Talent Honors Program*

Hanoi, Vietnam

*Sep 2017 – Jul 2021*

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## EXPERIENCE

### Autodesk

*AI Research Scientist Intern*

San Francisco, CA

*May 2024 – Aug 2024 (Expected)*

- Develop production-ready deep generative models using Autoregressive Transformers and Diffusion backbones for generating 3D and CAD models from neural implicit representations, images, text, and point clouds.
- Technologies: Python, PyTorch (Lightning), Ray, AWS, Comet, HuggingFace, Blender, Fusion 360, OpenCascade.

### Quantitative Imaging Lab

*Graduate Research Assistant*

Houston, TX

*Aug 2022 – Dec 2025 (Expected)*

- Develop state-of-the-art (SOTA) deep learning models for Person Re-Identification and other CV tasks.
- Apply VAE/GANs and VLMs in image/text data augmentation and generation for Re-ID.
- Technologies: Python, PyTorch (Lightning), TensorFlow, OpenCV, Slurm, MLflow, Blender.

### Grooo International

*Machine Learning Engineer*

Hanoi, Vietnam

*Feb 2021 – Jul 2022*

- Preprocessed, cleaned, and visualized imbalanced large-scale datasets. Performed EDA and feature engineering.
- Built predictive ML models and developed efficient NLP models for AI-driven mobile applications.
- Technologies: Python, C++, PyTorch, TensorFlow, Docker, ONNX, API.

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## SELECTED PUBLICATIONS ([GOOGLE SCHOLAR](#))

1. **V. D. Nguyen**, K. Khaldi, D. Nguyen, P. Mantini, and S. K. Shah. “Contrastive Viewpoint-aware Shape Learning for Long-term Person Re-Identification”. In *WACV*, 2024. [[Paper](#)] [[Code](#)]
2. **V. D. Nguyen**, P. Mantini and S. K. Shah. “Attention-based Cross-Modality Learning for Cloth-Changing and Occluded Person Re-Identification”. In *ICIP*, 2024.
3. **V. D. Nguyen**, P. Mantini, and S. K. Shah. “Occlusion-aware Cross-Attention Fusion for Video-based Occluded Cloth-Changing Person Re-Identification”. In *IJCB*, 2024 (*Oral*).
4. **V. D. Nguyen**, P. Mantini, and S. K. Shah. “Occluded Cloth-Changing Person Re-Identification via Occlusion-aware Appearance and Shape Reasoning”. In *AVSS*, 2024 (*Oral*).
5. **V. D. Nguyen**, P. Mantini, and S. K. Shah. “Contrastive Clothing and Pose Generation for Cloth-Changing Person Re-Identification”. In *CVPRW*, 2024. [[Paper](#)]
6. **V. D. Nguyen**, S. Mirza, A. Zakeri, A. Gupta, K. Khaldi, R. Aloui, P. Mantini, S. K. Shah, and F. Merchant. “Tackling Domain Shift in Person Re-Identification: A Survey and Analysis”. In *CVPRW*, 2024. [[Paper](#)]
7. **V. D. Nguyen**, P. Mantini, and S. K. Shah. “Temporal 3D Shape Modeling for Video-based Cloth-Changing Person Re-Identification”. In *WACVW*, 2024. [[Paper](#)] [[Code](#)].
8. K. Khaldi, **V. D. Nguyen**, P. Mantini, and S. K. Shah. “Unsupervised Person Re-Identification in Aerial Imagery”. In *WACVW*, 2024. [[Paper](#)]
9. **V. D. Nguyen**, S. Mirza, P. Mantini, and S. K. Shah. “Attention-based 3D Shape and Gait Representations Learning for Video-based Cloth-Changing Person Re-Identification”. In *VISIGRAPP (2: VISAPP)*, 2024. [[Paper](#)]
10. S. Mirza, **V. D. Nguyen**, P. Mantini, and S. K. Shah. “Data Quality Aware Approaches for Addressing Model Drift of Semantic Segmentation Models”. In *VISIGRAPP (3: VISAPP)*, 2024. [[Paper](#)]
11. S. Mirza, A. Gala, P. Devarakota, **V. D. Nguyen**, P. Mantini, and S. K. Shah. “Recall-based Knowledge Distillation for Data Distribution based Catastrophic Forgetting in Semantic Segmentation”. In *ICPR*, 2024 (*Accepted*).
12. **V. D. Nguyen**, P. Mantini, and S. K. Shah. “Cross-Attention Vision Transformer for Occluded Cloth-Changing Person Re-Identification”. *Under anonymous review*.

## PROJECTS

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### B-rep Generation

*Jun 2023 - Present*

- Preprocess large-scale CAD datasets, generate various data modalities for model training and evaluations.
- Develop a generative model to generate B-reps from different modalities, comprising Autoregressive Transformers for generating vertex/edge/face token sequences and a Diffusion model to tackle noisy input modalities.

### Texture Generation on 3D Mesh

*Jun 2023 - Present*

- Annotate Objaverse 3D dataset; Build a CLIP-based model to classify 3D objects based on quality and art style.
- Develop and implement a model to generate 3D mesh from 2D sketch image based on NeRF and EG3D.
- Implement a model based on CLIP and Stable DreamFusion to alter texture on 3D meshes given text prompt.

### Person Re-Identification (Re-ID) | [Code](#)

*Aug 2022 - Present*

- Design identity-aware 3D SMPL human reconstruction models to extract 3D shape, pose, and gait for Re-ID.
- Propose novel models based on CNNs, Transformers, GNNs, and attention mechanisms for Re-ID in-the-Wild.
- Construct two large-scale Re-ID datasets using generative models, semantic segmentation, and pose estimation.

### AI-Generated Image Detection | [Code](#)

*Jan 2024 - Mar 2024*

- Implemented a patch-based approach to detect deepfake or images generated by GAN or Diffusion models.

### Automated IDs and Business Cards Extractor

*Feb 2021 - Mar 2022*

- Tested OCR methods; Implemented Multi-lingual BERT model, achieving 90% accuracy in Korean and Japanese.
- Deployed model with TensorFlow using ONNX, FastAPI, and Docker.

## SKILLS

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**Programming:** Python, C++, R, MATLAB, SQL, PHP, HTML

**Frameworks & Libraries:** PyTorch (Lightning), TensorFlow, Keras, OpenCV, Pandas, NumPy, Scikit-Learn, SciPy

**MLOps:** Github, Docker, AWS, MLflow, Comet, Ray, HuggingFace, Azure ML Studio, API, ONNX, Blender

## REVIEWER SERVICES

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**Journals:** *IJCV, Pattern Recognition, IEEE TCSVT, Image and Vision Computing*

**Conferences:** *BMVC 2024, ACM Multimedia 2024, CVPR Workshops 2024, ICME 2024*

## HONORS AND AWARDS

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**Outstanding Junior Ph.D. Student Award**, awarded by University of Houston, 2024.

**Winner** (Audience's Choice) & **1st-Runner-up** (Committee's Choice) Prizes at the Ph.D. Research Showcase 2024.

**Cullen Graduate Student Success Fellowship**, awarded by University of Houston.

**FPT Young Talents Scholarship**, awarded by FPT Group for outstanding undergraduate researcher.

## LEADERSHIP

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**Founder and President** of Cougar Vision, partnering with [Cougar AI](#)

*Mar 2024 - present*

**Graduate Student Advisory Board**, College of Natural Sciences and Mathematics, UH

*Aug 2023 - present*

**Secondary Student Officer**, Computer Science Graduate Student Association, UH

*Aug 2022 - present*

## CERTIFICATES

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Model Parallelism: Building and Deploying Large Neural Networks

*NVIDIA*

Microsoft Azure Machine Learning

*Microsoft*

Generative AI with Large Language Models

*Coursera*

Machine Learning Engineering for Production (MLOps) Specialization

*DeepLearning.AI*

## REFERENCES

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[Hooman Shayani](#), Sr. Research Manager, Autodesk

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[Shishir Shah](#), Chair of Department of Computer Science, University of Houston

Email: [sshah@central.uh.edu](mailto:sshah@central.uh.edu)