

Hoang Minh Thanh

ML Engineer for 3D Digital Humans

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With a strong foundation in machine learning and 3D digital human modeling. My work on DeepGesture and the GENE Leaderboard showcases end-to-end expertise, from training transformer and diffusion models on SMPL/BEAT 2 datasets to deploying production-grade evaluation systems and interactive 3D applications using Python, C++, and WebGL. I bring a combination of research depth and engineering execution to advance **Meshcapade's** mission.

★ Keypoint

- **Passionate about digital human:** Creator of [OpenHuman](#). Project: [openhuman-ai/renderengine](#), [GLSL Shader](#), [HairMimic/Code](#), [CrossSphere](#),... [Universal Human \(Chris Jones\) render](#), [Blender render](#).
Proposed the [DeepGesture](#) model, based on DiffuseStyleGesture and DeepPhase. Developed [GestureScore](#) for evaluation gesture generated.
- **Strong grasp of attention mechanisms and diffusion models:** Trained ML models for gesture generation, 3D human motion synthesis, and multimodal behavior modeling using transformer-based and diffusion architectures. Experience working with the SMPL **BEAT2 dataset** for motion and behavior analysis.
- **Comprehensive understanding Computer Graphics:** *Keyword learned:* Ray Tracing in One Weekend, Subsurface scattering, Rendering Equation, [pbrt-v4](#), [webgl2fundamentals](#), Physics/Spectrum/Eye Vision Structure of Color, ... [My Fillament doc remake](#) (BRDF, Diffuse, Reflection).
- **Proficient in Python and web technologies,** Skilled in Blender, Maya, and Unity . Extensive experience in modeling, rigging, texturing, optimization, and technical workflows, and deep understanding [glTF JSON Structure](#) for export and integration of 3D assets into web applications.
Skilled in Unity: [DeepGesture video render](#), Game made by Unity - (Play my game [Pucca Runner](#))
- **Experienced in Research environments:** one of organizer of [GENEA Leaderboard](#), creator of [HEMVIP v2](#). Experienced in technical discussions, writing documentation, and collaborating effectively with international teams.

🎓 Education

AS	University of Science - VNUHCM, Information Technology	2012 – 2015
BS	University of Science - VNUHCM, Computer Science	Sept. 2018 – Sept. 2020
	<ul style="list-style-type: none">• GPA: 3.3/4.0• Thesis: GCAT - Link Prediction in Knowledge Graph, Code, Paper.	
MSc	University of Science - VNUHCM, Computer Science	Oct. 2021 – Dec. 2024
	<ul style="list-style-type: none">• GPA: 3.44/4.0• Thesis: OpenHuman: A conversational gesture synthesis system based on emotions and semantics, Code, Paper, Huggingface, Unity, Demo, Homepage.	

📖 Publications

DeepGesture: A conversational gesture synthesis system based on emotions and semantics [Paper] , [Homepage]	Jul. 2025
Towards a GENE Leaderboard [arXiv]	Oct. 2024
Graph Collaborative Attention Network for Link Prediction in Knowledge Graphs [arXiv]	Oct. 2020

Experience

Rakumo Inc, Software Engineer

Jul. 2019 – Apr. 2020

- Django Web: develop webapp integrate DocuSign.

FPT Software, AWS Data Engineer

Oct. 2020 – Nov. 2021

- CI/CD pipeline, implemented and modified real-time and batch data pipelines on AWS using Kinesis, Lambda, S3, Glue, StepFunction, SNS, etc.
- Collaborated with international teams in Agile development

VNG Corp, Software Engineer

Oct. 2021 – May 2024

ZDN Team (Zalo Content Delivery Network): caching service serve millions request

- Implement scheduled `ScheduledThreadPool` for monitoring stats execution.
- Built Ant admin dashboard with server visualization via amchart, p5.js in NextJS.

OpenHuman [🔗](https://openhuman.ai) (openhuman.ai [🔗](https://openhuman.ai)), Creator

May 2024 – Present

- Join GENE Research Team ([GENEA Leaderboard](#) [🔗](#), [HEMVIP](#) [🔗](#)): Designed and built a full-stack, production-ready leaderboard system to evaluate multiple AI gesture generation models, integrating user study workflows via Prolific.
- [DeepFACS](#) [🔗](#): Create multiple blendshape compatible with ARKit 52 for blendshape, using Faceform Wrap for transfer topology from 3DScanStore basemesh to facial expression.
- [DeepGesture](#)[🔗](#) ([Demo](#)[🔗](#)): Developed gesture generation AI system on Unity based on the [DeepPhase](#) [🔗](#). Retarget skeleton animation using MotionBuilder.

Projects

DeepGesture ([Code](#) [🔗](#))

deepgesture.github.io [🔗](#)

Three.js realistic face for OpenHuman ([Code](#) [🔗](#))

renderengine.pages.dev [🔗](#)

- Loaded and scaled facial OBJ parts in Blender (eyeball, head, tongue, etc.); applied edited albedo, roughness, specular, clearcoat maps; configured dat.GUI, environment toggle, and tone mapping for realistic facial rendering

HairMimic - In progress hair simulation for OpenHuman ([Code](#) [🔗](#))

hairrich.github.io [🔗](#)

- Load hair meshes and generated from Maya XGen Grooming

3D Human Model with ReadyPlayerMe ([Code](#) [🔗](#)) Integrated and configured ReadyPlayerMe model with morph targets in Three.js.

3d-human-model [🔗](#)

MillionScope ([Code](#) [🔗](#)) ChatGPT-Clone with Chat SDK. Stream response result of Cloudflare Workers & Cloudflare AI.

millionscope.com [🔗](#)

Unity Game Pucca Runner ([Code](#) [🔗](#)) Pathfinding with a 2D hash map and Dijkstra's algorithm; runner moves toward the player and triggers collision on boundary breach

Pucca Runner [🔗](#)

Practice Three.js Project ([Code](#) [🔗](#)) - Deployed with Cloudflare Pages.

humanmodel.pages.dev [🔗](#)

Three.js Online Demo: [GlowShader](#) [🔗](#)/ [Code](#) [🔗](#), [SpringSphere](#) [🔗](#)/ [Code](#) [🔗](#), [Vinfast Car](#) [🔗](#)/ [Code](#) [🔗](#), [Jumming Girl](#) [🔗](#)/ [Code](#) [🔗](#), [Cross Sphere](#) [🔗](#)/ [Code](#) [🔗](#).

Others: MetaPet (metapet.vercel.app [🔗](#)/ [Code](#) [🔗](#)): Simple NFT Marketplace with Solidity. cortexpod.com [🔗](#)/ [Code](#) [🔗](#); pithagon.com [🔗](#)/ [Code](#) [🔗](#): web blog compile from markdown source to React components using rehype, remark, mdx.js.

Certifications

- [Critical Thinking Certification 2014](#) [🔗](#), [Emotion Recognition Certification 2019](#) [🔗](#), [Summer ML](#) [🔗](#)
- Coursera: [Design Pattern](#) [🔗](#), [TensorFlow Developer Professional](#) [🔗](#)
- [AWS Solutions Architect - Associate](#) [🔗](#), [AWS Machine Learning - Specialty](#) [🔗](#), [Solution Architect](#) [🔗](#)

2021

2021