Hoang Minh Thanh

Machine Learning Engineer

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With a strong foundation in machine learning and 3D motion animation, my work on DeepGesture showcases end-to-end expertise - from training transformer and diffusion models to deploying the GENEA Leaderboard as a production-grade evaluation system. I believe I am well-suited for the Machine Learning Engineer position, contributing to **Motorica AI**'s ongoing journey.

Keypoint

- **Passionate about motion synthesis and digital human**: Proposed the DeepGesture model, based on DiffuseStyleGesture and DeepPhase. Developed GestureScore for evaluation gesture generated.

  Creator of OpenHuman: openhuman-ai/renderengine, GLSL Shader, DeepGesture video render
- **Expertise in diffusion models and sinusoidal function**: Strong grasp fourier transform, developed ML models for gesture generation, 3D human motion synthesis, and multimodal behavior modeling using transformer-based and diffusion architectures. Worked with the ZeroEGGS retarget dataset (Daniel Holden) on DeepPhase-Unity (AI4Animation - Sebastian Starke). Experienced with SMPL and BEAT2.
- **Proficient in 3D**: Skilled in Blender, Maya, Unity, Python and web technologies. Extensive experience in modeling, rigging, texturing, optimization, and 3D assets technical workflows, ZWrap (transfer topology), ZBrush (layer baking).
- **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

- GPA: 3.3/4.0
- **Thesis:** GCAT - Link Prediction in Knowledge Graph, [Report], [Code]

MSc **University of Science - VNUHCM**, Computer Science — Oct. 2021 – Dec. 2024

- GPA: 3.44/4.0
- **Thesis:** OpenHuman: A conversational gesture synthesis system based on emotions and semantics, [Report], [Code]

Publications

DeepGesture: A conversational gesture synthesis system based on emotions and semantics [arXiv], [Homepage] — Jul. 2025

Towards a GENEA 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

- Developed a Django-based web application with integrated 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.
- Cox Automotive (onsite-offshore): Collaborated with international teams in Agile

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 (openhuman.ai), Creator — May 2024 – Present

- Join GENEA 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. Digitized myself using Character Creator 4.
- 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 realisitic 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

- Generat hair from Maya XGen Grooming and load hair meshes, hair strand design.

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 Dijkstras algorithm; runner moves toward the player and triggers collision on boundary breach — Pucca Runner

Side projects: Morph target animation ReadyPlayerMe, MetaPet (metapet.vercel.app), cortexpod.com/Code; pithagon.com: 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 — 2021
- **AWS**: Solutions Architect - Associate, Machine Learning - Specialty; Solution Architect — 2021