Thanh Hoang-Minh

ML Engineer for 3D Digital Humans - Remote

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With a strong foundation in machine learning and 3D digital human modeling. My work on DeepGesture and the GENEA 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 evalution 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

- 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

- 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 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

- 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 (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. Turn myself to digital human with 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 silmulation for OpenHuman (Code) — hairrich.github.io

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

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) - Deloyed 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 — 2021
- **AWS**: Solutions Architect - Associate, Machine Learning - Specialty; Solution Architect — 2021