

# Graham Felton

MSCD, BS Arch  
AI/ML Engineer | Deep Learning | Computer Vision | 3D Vision

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## ABOUT

ML & 3D Vision ML/AI engineer specializing in 3D vision and deep learning with experience in model training, dataset pipelines, and applied research.

## EDUCATION

Carnegie Mellon University	<b>Master of Science in Computational Design</b> <ul style="list-style-type: none"><li>Awards<ul style="list-style-type: none"><li>Academic Merit Scholarship</li></ul></li><li>Relevant Coursework<ul style="list-style-type: none"><li>10-606 - Mathematics for Machine Learning</li><li>10-607 - Computer Science for Machine Learning</li><li>11-685 - Introduction to Deep Learning</li><li>10-623 - Generative AI</li><li>16-825 - Learning for 3D Vision</li></ul></li></ul>	August 2024 - May 2026 2 years
University of Utah	<b>Bachelor of Science in Architecture</b> <ul style="list-style-type: none"><li>Awards<ul style="list-style-type: none"><li>Academic Dean's List (Multiple Years)</li></ul></li></ul>	August 2018 - May 2023 5 years

## PROFESSIONAL EXPERIENCE

Payette Boston, USA	<b>Applied AI Research Internship</b> <ul style="list-style-type: none"><li>Fine-tuned Stable Diffusion with a custom LORA model.</li><li>Built pipeline to generate 10k+ Gaussian Splat Scene Representations from panorama datasets.</li><li>Streamlined dataset collection and preprocessing with Python &amp; PyTorch.</li></ul>	May 2025 - August 2025 3 months
Carnegie Mellon University Pittsburgh, USA	<b>Research Assistant</b> <ul style="list-style-type: none"><li>Prototyped single-view, monocular real-time 3D reconstruction application pipeline for gesture-based data capture.</li><li>Achieved real-time inference through modifications to existing codebase.</li></ul>	August 2025 - Now Present
Carnegie Mellon University Pittsburgh, USA	<b>Research Assistant</b> <ul style="list-style-type: none"><li>Responsible for documentation and visualization of bioclimatic research on architectural ceramics using Rhino 3D and Grasshopper under Carnegie Mellon University's School of Architecture Program Head, Omar Khan.</li></ul>	August 2024 - December 2024 4 months
RYZIN Remote	<b>3D Artist</b> <ul style="list-style-type: none"><li>Collaborated on a multidisciplinary team to digitally model and texture props for <i>Call of Duty: Modern Warfare (2019)</i> while in school.</li></ul>	May 2018 - July 2018 3 months

## PROJECTS

<b>Vision Transformer 2D to 3D Generative Model</b>	<b>Introduction to Deep Learning Final Project</b> <ul style="list-style-type: none"><li>Designed ViT pipeline (DINOv2 + custom decoder) to generate 3D models from sketches.</li><li>Built dataset with TripoSR, automated preprocessing, and trained end-to-end on A100 GPUs with WandB tracking.</li></ul>	CMU - 11-685
<b>Automatic Speech Recognition</b>	<b>Introduction to Deep Learning</b> <ul style="list-style-type: none"><li>Developed Transformer-based ASR system with seq2seq + attention, trained 150 epochs on A100.</li><li>Reached 22.6% CER and 5.33 perplexity on validation set.</li></ul>	CMU - 11-685
<b>2.5D Raycast Rogue-Like</b>	<b>Fundamentals of Programming</b> <ul style="list-style-type: none"><li>Built modular game engine in Python with collision detection, AI pathfinding, and state management.</li><li>Implemented real-time 2.5D rendering via custom raycasting algorithms.</li></ul>	CMU - 15-112
<b>Facial Recognition with CNN</b>	<b>Introduction to Deep Learning</b> <ul style="list-style-type: none"><li>Implemented CNN-based face recognition pipeline with ResNet backbones, leveraging data augmentation</li><li>Achieved robust classification and verification on VGGFace2 and Kaggle benchmark datasets</li></ul>	CMU - 15-112

## TECHNICAL SKILLS

Programming	Python, JavaScript, HTML, C++, C#, React
ML & Data	PyTorch, NumPy, Pandas, wandb, Jupyter, Flask, Streamlit, Docker
Computer Vision & 3D	PyTorch3D, OpenCV, MediaPipe, Gaussian Splatting, TripoSR
Deep Learning	CNNs, Transformers, Vision Transformers, Generative 3D Models
Tools	Git, Rhino 3D, Grasshopper, Revit API