

Résumé - Vikas THAMIZHARASAN



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EDUCATION

University of Massachusetts, Amherst
Ph.D. in Computer Science (2022 - *Current*)
Advisor: Prof. Evangelos Kalogerakis

Brown University
Masters in Computer Science (2021)
Advisors: Prof. James Tompkin and Prof. Daniel Ritchie

IIIT - Hyderabad
Bachelor Of Technology in Computer Science and Engineering (2018)

WORK EXPERIENCE

MAY 2024 - JAN 2025	Research Scientist Intern , Adobe Research Building generative models for vector graphics.	San Jose, CA
MAY 2023 - JAN 2024	Research Scientist Intern , Adobe Research Researched neural implicit representations for vector graphics and probabilistic distillation methods for T2I models.	San Jose, CA
JAN 2022 - AUG 2022	Research Intern , Activision Blizzard Contributed to state-of-the-art digital human technologies. Received credits for <i>Call of Duty: Modern Warfare II</i> (2022).	Los Angeles, CA
MAY 2020 - DEC 2021	Graduate Research Assistant , Visual Computing Lab, Brown University Researched problems in the intersection of CV, Graphics, and ML.	Providence, RI
MAY 2021 - AUG 2021	Programming Intern , Activision Blizzard Worked in the R&D team on statistical 3D face modelling.	Los Angeles, CA
AUG 2018 - FEB 2019	Research Intern , INRIA Face attribute analysis from structured light data.	France
MAY 2017 - AUG 2017	Google Summer of Code Intern , Google [Source code and Wiki]	Remote

PUBLICATIONS

Mean-Shift Distillation for Diffusion Mode Seeking (*under review*)
V. Thamizharasan, N. Chatzis, I. Georgiev, M. Fisher, D. Liu, N. Zhao, E. Kalogerakis, M. Lukác
[\[Paper \]](#) [\[Website \]](#)

NIVeL: Neural Implicit Vector Layers for Text-to-Vector Generation (CVPR 2024)
V. Thamizharasan, D. Liu, M. Fisher, N. Zhao, E. Kalogerakis, M. Lukác
[\[Paper \]](#) [\[Website \]](#)

GEM3D: Generative Medial Abstractions for 3D Shape Synthesis (SIGGRAPH 2024)
D. Petrov, P. Goyal, V. Thamizharasan, V. Kim, M. Gadelha, M. Averkiou, S. Chaudhuri, E. Kalogerakis
[\[Paper \]](#) [\[Website \]](#)

VecFusion: Vector Font Generation with Diffusion (CVPR 2024 Highlight)
V. Thamizharasan*, D. Liu*, S. Agarwal, M. Fisher, M. Gharbi, O. Wang, A. Jacobson, E. Kalogerakis
[\[Paper \]](#) [\[Website \]](#)

Learning Physically-based Material and Lighting Decompositions for Face Editing (CVM 2022)
CVPR 2021 AICC Workshop
Q. Zhang*, V. Thamizharasan*, J. Tompkin
[\[Paper \]](#) [\[Presentation \]](#) [\[Code \]](#)

Improving Image-based Generation of Implicit Texture Fields for 3D Objects (2021)

V. Thamizharasan, J. Pierce, D. Ritchie

[\[Paper \]](#) [\[Code \]](#)

Shape from Tracing: Towards Reconstructing 3D Object Geometry and SVBRDF Material from Images via Differentiable Path Tracing (3DV 2020)

P. Goel, L. Cohen, B. Guesman, V. Thamizharasan, J. Tompkin, D. Ritchie

[\[Webpage \]](#) [\[Paper \]](#)

Face Attribute Analysis from Structured Light: An End-to-End Approach (Multimedia Tools and Applications 2019)

V. Thamizharasan, A. Das, D. Battaglino, F. Bremond, A. Dantcheva

[\[Paper \]](#)

PROJECTS

Non-Linear Deep Face Models

Deep learning powered 3D generative model that captures non-linear deformations and properties of human face geometry and appearance. Our method learns a disentangled identity and expression latent space, models the correlation between appearance and geometry, captures high-frequency textures and provides artistic semantic control.

[\[Source Code \]](#) PyTorch

Illumination-guided example-based stylization of 3D renderings

GPU and CPU implementation of StyLit, an image-analogy based style transfer method. We achieve real-time performance.

[\[Source Code \]](#) [\[Video \]](#) C++, CUDA

Interactive Graphics Course, CSCI 2240

Implemented Monte Carlo path tracer, geometry processing operations like subdivisions, simplification and remeshing and animating deformable solid objects using FEM.

[\[ref1 \]](#) [\[ref2 \]](#) [\[ref3 \]](#) C++, Eigen

3D Object Reconstruction and Manipulation with a single image

An interactive method to reconstruct 3D models from a single image by fitting geometric primitives via constrained optimization through the inference of user-guided geo-semantic constraints. The result was an interactive image editor for object manipulation.

[\[Source Code \]](#) PyQt3D, OpenCV, SciPy

TECHNICAL SKILLS

LANGUAGES Python, C++, C, MATLAB, C#, Bash, Javascript, CUDA, Racket/Scheme.

LIBRARIES Pytorch, Tensorflow, OpenCV, SciPy, NumPy, Qt, Eigen, OpenGL, Windows Form App

TOOLS Blender, Inkscape, LaTeX, GCP, Android Studios, Unity, Renderman.

ACHIEVEMENTS

2017 Microsoft Code.Fun.Do Hackathon Winner Hyderabad, India.

2013 Top 5 in World Health Organization Art competition.

PROFESSIONAL SERVICES

Reviewer. CVPR '24, '25; ECCV '24.

Teaching Assistant, University of Massachusetts, Amherst.

Game Programming, CSCI 576, Fall 2022, 2023.

Intelligent Visual Computing, CSCI 674, Spring 2023, 2024.

Teaching Assistant, Brown University.

Topics in 3D Computer Vision and Machine Learning, CSCI2952K, Fall 2020.

Computer Vision, CSCI1430, Spring 2021.

Co-organizer, Machine Learning & Friends Lunch (MLFL), University of Massachusetts, Amherst.

Volunteer, IEEE International Conference on Image Processing, Applications and Systems.

Head of Art Committee, IIIT-Hyderabad.