

Vidya Narayanan

☎ (+1) 412-789-0750 | ✉ vidyan@cmu.edu | 🏠 vid8687.github.io | 🎓 Vidya Narayanan

I am interested in improving computational design and fabrication ecosystems by building better techniques, interfaces and design languages.

Research Interests: Computational Textiles, Computational Design, Fabrication & Computer Graphics

Education

Carnegie Mellon University PH.D. IN COMPUTER SCIENCE

Thesis: Foundations for 3D Machine Knitting. Advisor: James McCann

Pittsburgh, USA

2016 - 2021 (Expected)

Indian Institute of Science MASTER OF SCIENCE (ENGG)

Thesis: Similarity of Scalar Fields. Advisor: Vijay Natarajan

Bangalore, India

2012 - 2015

National Institute of Technology BACHELOR OF TECHNOLOGY, COMPUTER ENGINEERING

Surat, India

2004 - 2008

Work Experience

Adobe Research RESEARCH INTERN

Mentors: Michal Lukáč, Amanda Ghassaei, Danny Kaufman

I built a system to semi-automatically fold 2D dielines into 3D forms and contributed to the Adobe Max '19 Sneak Demo *Fantastic Fold*.

San Jose, USA

May 2018 - Aug 2018

Disney Research RESEARCH ASSOCIATE

I worked on a high-level design language and compiler for machine knitting.

Pittsburgh, USA

Aug 2015 - June 2016

NVIDIA SYSTEM SOFTWARE ENGINEER

I implemented and maintained DirectX graphics drivers for NVIDIA GPUs.

Pune, India

Jan 2011 - Jul 2012

Tata Elxsi SOFTWARE DEVELOPER

Developed graphics applications for clients including EA Brightlight's official *Harry Potter and the Deathly Hallows* game.

Bangalore, India

Nov 2008 - Dec 2010

Publications

- [1] Inverse Design Tool for Asymmetrical Self-Rising Surfaces with Color Texture
Jianzhe Gu, **Vidya Narayanan**, Guanyun Wang, Danli Luo, Harshika Jain, Kexin Lu, Fang Qin, Sijia Wang, James McCann, Lining Yao
Symposium on Computational Fabrication, 2020
- [2] Representing Crochet with Stitch Meshes
Runbo Guo, Jenny Lin, **Vidya Narayanan**, James McCann
Symposium on Computational Fabrication, 2020
- [3] Visual knitting machine programming
Vidya Narayanan, Kui Wu, Cem Yuksel, James McCann
ACM Transactions on Graphics (TOG) SIGGRAPH 2019
- [4] Efficient Transfer Planning for Flat Knitting
Jenny Lin, **Vidya Narayanan**, James McCann
Proceedings of the 2nd ACM Symposium on Computational Fabrication, 2018
- [5] Automatic Machine Knitting of 3D Meshes
Vidya Narayanan, Lea Albaugh, Jessica Hodgins, Stelian Coros, James McCann
ACM Transactions on Graphics (TOG) 2018
- [6] An exploratory framework for cyclone identification and tracking
Akash Anil Valsangkar, Joy Merwin Monteiro, **Vidya Narayanan**, Ingrid Hotz, Vijay Natarajan
IEEE transactions on visualization and computer graphics IEEE, 2018
- [7] A Compiler for 3D Machine Knitting
James McCann, Lea Albaugh, **Vidya Narayanan**, April Grow, Wojciech Matusik, Jennifer Mankoff, Jessica Hodgins
ACM Transactions on Graphics (TOG) SIGGRAPH 2016
- [8] Distance between extremum graphs
Vidya Narayanan, Dilip Mathew Thomas, Vijay Natarajan
IEEE Pacific Visualization Symposium, 2015

Talks

An Introduction to 3D Machine Knitting COMPUTATIONAL FABRICATION SEMINAR

Visual Knitting Machine Programming SIGGRAPH

Automatic Machine Knitting of 3D Meshes SIGGRAPH

Comapring Scalar Functions with Extremum Graphs PACIFIC VIS

virtual April 2021

Los Angeles, USA August 2019

Vancouver, Canada July 2018

Hangzhou, China April 2015

Service

Teaching	TA for 15-462 (CMU) Computer Graphics (taught by Keenan Crane) Fall 2020
	TA for 15-300 (CMU) Research & Innovation in CS (taught by Jonathan Aldrich & Bogdan Vasilescu) Fall 2019
	Guest Lecture for 15-869 (CMU) Algorithmic Textiles Design: Introduction to Machine Knitting (Spring 2020) and Making 3D shapes with knitting, weaving and folding (Spring 2021)
	Knitout Office Hours: held weekly for introducing machine-knitting using knitout (with CMU Textiles Lab) 2018 onwards
Mentoring	Michelle Guo (Undergraduate Researcher, CMU) Tile-based visualization and design of crochet patterns (Summer 2020) Aparajita Haldar (Undergraduate Researcher, BITS Pilani Goa) Comparing contour-tree algorithms (IISc, Summer 2015)
Reviewing	SIGGRAPH (2020-21), SIGGRAPH ASIA(2019-21), TEI(2019), SCF(2018,20)
Committees	Posters Chair, Symposium on Computational Fabrication 2019, Pittsburgh, USA
	Student Member, Doctoral Review Committee (2017-21), Computer Science Department, CMU
	Student Member, PhD Admissions Committee (2020), Computer Science Department, CMU
