KINJAL PARIKH

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RESEARCH INTERESTS

My research area is computer graphics and I am particularly interested in geometry processing. My current focus is on computing shape descriptors for analysis of 3D geometry. To this end, I am working on computing higher-order derivatives through the application of multilinear algebra.

EDUCATION

University of Toronto Sept 2022 - Present
PhD in Computer Science at Dynamic Graphics Project
Advised by Prof. David Levin

Savitribai Phule Pune University 2017 - 2021
B.Tech. in Computer Engineering

RESEARCH

Summer Geometry Institute, Massachusetts Institute of Technology July 2021 - Aug 2021
Summer Research Program *Acceptance rate: 5.4 %*

- Topic: Optimal Interlocking Parts via Implicit Shape Optimizations
  Mentor: Professor David Levin, Dept. of Computer Science, University of Toronto
- Topic: Self-similarity loss for shape descriptor learning in correspondence problems
  Mentor: Dr. Tal Schnitzer, Dept. of Computer Science, Massachusetts Institute of Technology
- Topic: Learning Classifiers of Parametric Implicit Functions
  Mentor: Dr. Matheus Gadelha, Adobe Research

Indian Institute of Technology, Bombay May 2020 - July 2021
B.Tech. Research Project

Topic: Formalization of Translation Performed by the SCLP compiler phases
Advisor: Professor Uday Khedker, Dept. of Computer Engineering
(SCLP is a language processor used to teach UG courses CS302+CS316 at IIT Bombay)

- Developed a novel model of compilation that focuses on the intermediate representations produced by a compiler and their step-wise refinement.
- Created specifications for two intermediate representations and for the translation between them.
- Built a transpiler that can generate C++ code for translation between two intermediate representations from the translation specification we created

EXPERIENCE

University of Toronto Sept 2023 - present
Teaching Assistant

- CSC108H1: Introduction to Computer Programming

Walmart Global Tech India Aug 2021 - Aug 2022
Software Engineer

- Worked on several Java Springboot projects for logistic systems used in international markets.

Walmart Global Tech India June 2020 - July 2020
Summer Intern

· Contributed to a project automating the calculation of key performance indicators for workflows. Used PySpark and Microsoft SQL.

PROJECTS

Isosurface Stuffing Dec 2023

· Reimplemented "Isosurface Stuffing: Fast Tetrahedral Meshes with Good Dihedral Angles" by Francois Labelle and Jonathan Richard Shewchuk.

NeRF April 2023

· Reimplemented 'Nerf: Representing scenes as neural radiance fields for view synthesis'

Quasi-harmonic weights Dec 2022

· Reimplemented the paper 'Fast Quasi-Harmonic Weights for Geometric Data Interpolation' by Yu Wang and Justin Solomon - using Python.

Normal-Driven Spherical Shape Analogies July 2021

· Reimplemented the paper 'Normal-Driven Spherical Shape Analogies' by Hsueh-Ti Derek Liu and Alec Jacobson - using MATLAB.

Virtual Drumkit May 2020

· Developed an application that simulates a Drumkit using OpenCV.

Augmented Reality Photo Booth App Fen 2020

· Developed an Android application using Sceneform framework that allows users to take pictures with virtual 3D objects.

AWARDS AND SCHOLARSHIPS

Wolfond Scholarship Program in Wireless Information Technology 2022-2024
University of Toronto 20,000 CAD

Seminar report on *Scene Graph Generation* 2020
Cummins College of Engineering top 15 (out of 224) student seminars

Lady Ada National Programming Contest for Women 2019
ACM-W India among top 10 finalists

Code-It Intra-college coding competition 2019, 2018
ACM-W College Chapter 1st rank

National Creative Aptitude Test 2018
International Forum for Excellence in Higher Education all India 99.5^{th} percentile in 1^{st} round

OUTREACH

Summer Geometry Institute - student volunteer July 2023

· Organized social events

· Assisted students in their projects and coordinated with project mentors

Samyak Drishti Foundation NGO 2017 - 2020

· Taught basic English course to underprivileged school girls

· Organized and participated in various environmental and social drives.

Hour of Code Dec 2018

· Volunteered in a drive for encouraging children to participate in computer science related activities.