Pratheba Selvaraju — pselvaraju@umass.edu — +1 646 725 1109

Education

University Of Massachusetts, Amherst,(Ph.D. - CS) *Jan 2018 - Dec 2024*

Columbia University, NewYork, (M.S., CS) *Sep 2011 - Dec 2012*

Publications

Conference

- BuildingNet:Learning to Label 3D Buildings: **Pratheba Selvaraju**, Mohamed Nabail, Evangelos Kalogerakis, Siddhartha Chaudhuri.**(ICCV Oral -2021)**
- Developable Approximation of Neural Implicits via Rank Minimization: **Pratheba Selvaraju**. **(Accepted - International conference on 3D Vision (3DV-2024))** .
- OFER: Occluded Face Expression Reconstruction: **Pratheba Selvaraju**, Victoria Fernandez Abrevaya, Timo Bolkart, Tiamyu Ding, Faezeh Amzadi, Ilya Zharkov.
  (Under submission - Conference)
- FORA: Fast-Forward Caching in Diffusion Transformer Acceleration: **Pratheba Selvaraju**, Tianyu Ding, Tianyi Chen, Ilya Zharkov, Luming Liang.
  (arXiv, Towards conference submission)

Journal

- A 3D digitisation workflow for architecture-specific annotation of built heritage: Marissia Deligiorgi, Maria I Maslioukova, Melinos Averkiou, Andreas C Andreou, **Pratheba Selvaraju**, Evangelos Kalogerakis, Gustavo Patow, Yiorgos Chrysanthou, George Artopoulos .**(JASREC -2021)**

Research Internship

Roblox Corporation, San Mateo, CA *June 2024 – current*

- AccessoryAdapation for morphologically different avatars: Deforming and adapting a garment/clothing from a human to non-humanoid characters with no specified correspondence mapping.
  (Towards conference submission)

Microsoft - Applied Science Group, Redmond, WA *Sep 2022 – Dec 2022*

- OFER: Occluded Face Expression Reconstruction, a diffusion based generative model incorporating ranking mechanism to select optimal samples
- FORA: Fast-Forward caching in Diffusion Transformer Acceleration, a faster sampling mechanism for diffusion based transformer network

Google, Redmond, WA *Jun 2022 - Aug 2022*

- Worked on LiDAR building semantic labelling of parts and reconstruction
- Conducted experiments on real google street view lidar data to extract window positions to be used for training for part label segmentation
- Experiments to reconstruct the open surfaces (buildings)

Facebook Reality Labs, Redmond, WA *May 2020 - Sep 2020*

- Worked on virtual panel placement in synthetic room view in augmented reality setup
- Conducted experiments for better placement of the panel with respect to head positions dealing with occlusions and scale of the panel

Professional Experience

IMO, USA (Software Engineer) *Mar 2017 – Dec 2017*
Audio quality improvement of the IMO application by suppression of voice interruption and echo.

Machine Zone, USA (Software Engineer) *Sep 2016 – Jan 2017*
Art tool development for production of game assets using shader programming and 3D graphics

Microsoft, USA (Software Engineer) *Apr 2013 – Aug 2016*
Full stack developer in Skype for business

Technical Skills

Python, C++, Pytorch, OpenGL

3D Computer Vision, 3D Computer Graphics, Diffusion Generative modeling, Implicit reconstruction, Fast transformer, 3D reconstruction, Dataset Generation

PORTFOLIO

CV-Personal Webpage(pratheba.github.io)
LinkedIn(prathebaselvaraju)

REFEREES

Erik Learned-Miller,(University of Massachusetts, Amherst)
Email: elm@cs.umass.edu

Timo Bolkart, (Google Research)
Email: timo.bolkart@tuebingen.mpg.de

Victoria Fernandez Abrevaya Bolkart, (Max Planck Institute for Intellident Systems)
Email: victoria.abrevaya@tuebingen.mpg.de

Luming Liang, (Microsoft Research)
Email: llmpass@gmail.com