Param Hanji

Computer Vision | Computational Photography

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Experience

UNIVERSITY OF CAMBRIDGE | Postoc with Cengiz Öztireli

Oct 2022 – Current | Cambridge, UK

- 3D generative modelling with pointclouds and/or implicit neural representations
- Currently overseeing seven MPhil. course projects and supervising two individual year-long projects on image-space generative modeling

UNIVERSITY OF CAMBRIDGE | Research assistant with Rafał Mantiuk

Feb 2019 – Sept 2022 | Cambridge, UK

- Developed statistical estimators and generative models for inverse HDR imaging
- Worked on optical flow, differentiable rendering, neural view synthesis
- Helped build a capture-render-display system to pass the "Visual Turing Test"

HUAWEI RESEARCH CENTRE | Internship

Sept 2020 – Jan 2021 | Munich, Germany (remote due to COVID-19)

- Studied the effect of tone-curves (encoding functions) for Computer Vision
- Tested the robustness of CV methods to adversarial illuminations
- Published journal paper; successfully submitted a patent with collaborators

NATIONAL UNIVERSITY OF SINGAPORE | Research assistant with Gary Tan

July 2018 – Jan 2019 | Singapore-MIT Alliance for R&D, Singapore

- Instrumental in the first public release of `SimMobility`, a massively parallel agent-based framework to simulate traffic in Boston and Singapore
- Worked on graph optimization problems in the space of urban mobility

Academic activities

SELECTED PUBLICATIONS

1. `[link]` Mustafa, A., **Hanji, P.**, & Mantiuk, R. K. "Distilling Style from Image Pairs for Global Forward and Inverse Tone Mapping". ACM SIGGRAPH CVMP (2022).
2. `[link]` **Hanji, P.**, Mantiuk, R. K., Eilertsen, G., Hajisharif, S., & Unger, J. "Comparison of single image HDR—caveats of quality assessment". Siggraph (2022).
3. `[link]` Zhong, F., Jindal, A., Yöntem, Ö., **Hanji, P.**, Watt, S., & Mantiuk, R. "Reproducing Reality with HDR-MFS Display". Siggraph Asia (2021).
4. `[link]` Eilertsen, G., Hajisharif, S., **Hanji, P.**, Tsirikoglou, A., Mantiuk, R. K., & Unger, J. "How to cheat with metrics in SI-HDR reconstruction". LCI Workshop, ICCV (2021).
5. `[link]` **Hanji, P.**, Alam, M. Z., Giuliani, N., Chen, H., & Mantiuk, R. K. "HDR Dataset with Adversarial Illumination for Computer Vision methods". JIST and LIM (2021).
6. `[link]` **Hanji, P.**, Zhong, F., & Mantiuk, R. K. "Noise-Aware Merging of HDR Image Stacks without Camera Calibration". AIM Workshop, ECCV (2020).

SOFTWARES MAINTAINED/CONTRIBUTED TO

- `FovVideoVDP`: pip and conda package for HDR video quality assessment
- `HDRutils`: pip package for common operations on HDR images
- `pfstools`: command line programs for reading, writing and manipulating HDR data
- `TSeriesMMA`: CRAN package on Multiscale Multifractal Time Series Analysis

Skills

PROGRAMMING

Proficient:
C/C++ • Python • LaTeX

Familiar:
Matlab • Bash

LIBRARIES/TOOLS

PyTorch • CUDA • OpenCV • COLMAP • SLURM • Weights & Biases • Git • Docker

Education

UNIVERSITY OF CAMBRIDGE

PHD in Computer Science

Oct 2019 - Present | Cambridge, UK

Dept of Computer Science

Supervisor: Rafał Mantiuk

Funded by ERC Grant Horizon 2020

NATIONAL INSTITUTE OF TECHNOLOGY, KARNATAKA

Bachelor of Technology

June 2018 | Surathkal, India

Dept of Information Technology

GPA: 8.13 / 10.0

Teaching

PROJECTS SUPERVISED

Denoising Diffusion Probabilistic Models for Image Inpainting • Image rescaling by probabilistic disentanglement • Multi-monitor gaze-tracking • Image segmentation by depth and color

SUPERVISIONS AND TICKING

Machine Visual Perception • Introduction to Probability • Algorithms • Machine Learning and Bayesian Inference • Programming in C and C++ • Advanced graphics and image processing • Further Graphics • Introduction to Graphics