Yu Han

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Seeking Computer Vision Internship for Summer 2022

EDUCATION

Carnegie Mellon University (CMU) Pittsburgh, US
Master of Science in Computer Vision (MSCV) 08/2021– 12/2022
PEKING UNIVERSITY (PKU) Beijing, China
B.S. in Computer Science and Technology 09/2017– 07/2021

PUBLICATION

Yu Han*, Siyou Lin*, and Jianbo Shi. "Field Warping for Monocular Depth Estimation", *In submission.*
Yu Han, Shuai Yang, Wenjing Wang, and Jiaying Liu. "From Design Draft to Real Attire: Unaligned Fashion Image Translation", *ACM Int'l Conf. Multimedia, 2020.*

RESEARCH EXPERIENCE

GRASP Laboratory, University of Pennsylvania 02/2020-present
Research Intern (Advisor: Prof. Jianbo Shi), In submission

- Built a neural field warping-based framework for single-view depth estimation to convert the depth field estimation into a classification problem rather than a signed distance function (SDF) based regression task, which is far more efficient.
- Lifted 2D depth map to 3D depth field to gain flexibility in reasoning geometrical shape relationships in 3D space.
- Designed a technique called "3D pseudo normal"--computed from the depth field's implicit representation with an uncalibrated camera, it can be used as an additional supervisory signal.
- Improved the RMSE from 0.412 (SOTA) to 0.382.

Microsoft Research Asia (MSRA), Beijing 04/2021-07/2021
Research Intern (Advisor: Prof. Qiang Huo)

- Invented an attention-based style fusion module for text image rendering: improved the image general quality (PSNR) from 26.46 to 27.41 and generated 60,000+ images for text recognition task.
- Proposed a seal-removing technique trained on synthetic data to separate seals and text, which utilized Pix2pix and eased text recognition on seal contaminating samples.

Wangxuan Institute of Computer Science & Technology, PKU 03/2019-06/2021
Research Intern (Advisor: Prof. Jiaying Liu), Accepted by ACM MultiMedia 2020

- Introduced a saliency-based sampling layer to reduce the structure gap of standard image-to-image translation models including Pix2pix.
- Proposed a two-stream network for translating design drafts into real fashion items, seperating shapes and textures transformation into two separated streams.
- Improved the user score from 3.29 (Pix2pix) to 4.59 (max. is 5).

AWARDS AND HONORS

Stars of Tomorrow (Award of Excellent Intern), MSRA 07/2021
Merit Student, PKU 09/2020
Mentor, Open Source Promotion Plan, Institute of Software, Chinese Academy of Sciences 07/2020-09/2020
Excellent Research Award, PKU 09/2019

SKILLS

Programming Languages: Python, C++, Java, Javascript
Technology & Frameworks: Pytorch, Numpy, OpenCV, HTML
Technical Knowledge: *Expert:* Deep Learning, Machine Learning, Computer Vision, Algorithms, *Project & Course Development:* Compilers, Computer Architectures, Parallel Systems