HAONING WU

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EDUCATION

Peking University, China *Bachelor of Science, major in Computer Science* *Sep 2017 - Now*
Grade Point Average: **3.88** (latest year, 15%) / 3.51 (overall, 33%), **Excellent Study Award**

Second High School of Shijiazhuang, China *Sep 2014 - July 2017*
High School, Graduated, **Top 0.5%**

Core Courses: *Computational Photography (98), Parallel&Distributed Computing(96), Convex Optimization (89), CV&DL (91), Image Processing (ongoing), Signal&Systems (90), Introduction to AI(90)*

PUBLICATIONS & PROJECTS (AVAILABLE ON GITHUB ONCE ACCEPTED)

Combination of Adversarial and Likelihood Learning for Image Restoration *First Author* ***Ongoing, ICCV2021***
Advised by Prof. Jinshan Pan(NJUST), Dr. Xiangyu Xu(CMU) and Prof. Ming-Hsuan Yang(UC Merced)
- **Normalizing Flows** provide a way in explicit probability transformation, generating images as **GAN**s can.
- Analyzed crucial flaws of Flows for Image Reconstruction with weak generalization of naturally degraded images.
- Combined **Regularized Likelihood Maximization** and **Adversarial Learning** to generalize into real-world images.
- Conducted experiments on SR, Impainting and Colorization tasks and analyzed the advantages within our model.
- Made experiments on SR, Impainting and Colorization tasks and analyzed the advantages on our method.

Stereo Image Super Resolution via StereoScopic Guidance Networks *First Author* ***Submitting, CVPR2021***
- Studied Super Resolution from Stereo Image Pairs, given recent concerns that StereoSRs often uses costly vanilla Attention modules to integrate the stereo information, which is costly in computation resources.
- Defined the StereoScopic-Guided (SSG) Dynamic Attention module to efficiently learn the cross-view dependency.
- Implemented **Deformable Convolutions** on Image Restoration to minimize the misalignment with SSG restrictions.
- Reached **state-of-the-art** performance, making mathematical analysis on the method's theoretical bounds.

Dual Resolution Domain Matching on Real-world Super Resolution *Team Leader* ***for CVPR(W)2020***
Advised by Asso. Prof. Tingting Jiang(PKU), also got discussion with R.I. Boxin Shi(PKU) for details
- Was given a separate and limited baseline method and asked to improve it on realistic scenarios.
- Defined a connected pipeline to perform **Domain Matching** with much more generalization ability.
- Participated in NTIRE2020 RWSR-Track 2 with the method, winning the *second place* on Quality Assessor Rank.

Selected Course Projects on Computer Vision and Basic Algorithms: Available on my **Site** with codes.

INTERNSHIP EXPERIENCE

Megvii Incorporated, Beijing *July 2020 - Now*
Researcher on Image Enhancement (Intern), advised by Jiangyu Liu
· **High Dynamic Range Shadowed-Portrait Refinement** — *Major Contributor*
– Created the first Portrait Shadow Refinement with over-exposed portrait frame via **Fusion Alignment Network**.
– Introduced Non-local Objective Combination and Cross-Exposure Consistency to further refine the colors.

TECHNICAL SKILLS

Programming: Python (PyTorch, Sklearn, Tensorflow 2, MegEngine), C&C++, Matlab
Academic Writing: LaTex (Overleaf), Markdown (Typora, GitHub)

AWARD

- *Excellent Study* Award for **Top-10 Compound Rank** within a 62-person class.
- *Won Championship* for leading the College Orienteering Team as **Captain** in Beijing College Games.