<Libing Zeng>

PhD Student Annual Review Progress Report
May 2021

2020-2021 Milestones

- PhD Program Start Semester - **<Fall 2019>**
- Official or Unofficial Advisor (footnote 1) - **<Nima Kalantari>**
- Committee members - **<Nima Kalantari / CSCE, Xia Hu / CSCE, Shuiwang Ji / CSCE, Jim Ji / ECEN>**
- Degree plan (footnote 2) - **<Fall 2020>**
- Qualifier (footnote 3) - **<Spring 2020>**
- Preliminary exam (footnote 4) - **<ACTUAL OR PLANNED DATE/SEMESTER>**
- Proposal4 - **<ACTUAL OR PLANNED DATE/SEMESTER>**
- Final examination (footnote 5) - **<ACTUAL OR PLANNED DATE/SEMESTER>**
- Dissertation (footnote 5) - **<ACTUAL OR PLANNED DATE/SEMESTER>**
- Improvement plan (footnote 6) - ***DISCUSS IF APPLICABLE***

GPA (as of <semester> <year>): **<3.83>**

Course Number	Course Title	Semester	Grade
CSCE 441, 500	COMPUTER GRAPHICS	Fall 2019	A
CSCE 629, 602	ANALYSIS OF ALGORITHMS	Fall 2019	A
CSCE 606, 600	SOFTWARE ENGINEERING	Spring 2020	A
CSCE 689, 600	SPTP: COMP PHOTOGRAPHY	Spring 2020	A
CSCE-636-600	DEEP LEARNING	Fall 2020	B
CSCE-641-600	COMPUTER GRAPHICS	Fall 2020	A

Support

How were you supported in 2020-2021?
_____ Teaching Assistantship
__X_Research Assistantship with (Faculty member) ____Nima Kalantari_____
_____ Fellowship (name of fellowship)_____
_____ Job within TAMU
_____ Job outside TAMU
_____ Other _____

Research

I am interested in deep learning and computational photography. My current research is to solve depth estimation problems using deep learning. Prior to this, I have worked on video de-

noising using deep neural networks and the corresponding paper is published at ICCP (International Conference on Computational Photography).

- Research 2. Video depth estimation from monocular video is challenging. We use a learning-based prior and a conventional structure-from-motion reconstruction to establish geometric constraints to generate consistent video depth maps. I have been working on this project under the supervision of Prof. Nima Kalantari. Some progress has been made and a paper will come soon.

- Research 1. Video denoising is not just aiming to generate clear images from its corresponding noisy images. It also has to keep the temporal consistency of denoised images. Under the supervision of Prof. Nima Kalantari, Avinash Paliwal and myself work on this project using deep learning. The paper is published.

Publications

Number of publications: <1> published, **<0>** accepted, **<0>** submitted

1. *Avinash Paliwal, Libing Zeng, Nima Kalantari, "Multi-Stage Raw Video Denoising with Adversarial Loss and Gradient Mask," International Conference on Computational Photography (ICCP), 2021.*

Professional activities
None.

Goals for 2021-2022

- Goal 1 (degree requirements): I intend to complete four courses (4*3 credits) next year.

- Goal 2 (research). I intend to continue research on computational photography and deep learning; After finishing the current video estimation project and submitting a paper about it, I will do another related project in this area.

- Goal 3 (publications): I intend to submit the paper about video depth estimation to BMVC, which is due on June 25th. To complete this goal, I need to do the following: getting a video estimation result better than state of the art on TUM dataset, writing the paper, submitting the paper. This work is important for my research because it will be related to my dissertation, I'm hoping to get positive feedback from it. I also intend to get another paper published in some top conference. To complete this goal, I need to do the following: finding a new project, getting familiar with the new sub-area, coming up with new ideas and designing experiments to verify the ideas, generating superior results, and submitting a paper to some top conference, like CVPR, Siggraph, Siggraph Asia, ECCV and ICCV.

- Goal 4 (professional activities). I intend to attend ICCP 2021, and Siggraph 2022