SHU-CHUAN HSU

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Education

B.S. National Taiwan University (NTU)   **Sep. 2017 – present**
Department of Mechanical Engineering   *Taipei, Taiwan*
- Cumulative GPA: 4.09/4.30   Last 60 credit GPA:4.17/4.30   CS related GPA:4.13/4.30
- Ranking: 7/186 (4%)
- Honors: 2020 Spring Dean's List
- Relevant Courses: Computer Programming, Linear Algebra, Data Structure and Advanced Programming, Algorithm, Computer Architecture, Machine Learning Foundation, Machine Learning Technique, Computer Vision, Introduction to Computer Networks

Research Experience

AIIU Lab, CITI, Academia Sinica   **Jan 2021 – present**
Topic: Child/Spouse Prediction | Advisor: Jun-Cheng, Chen & Chih-Yu, Wang   *Taipei, Taiwan*
- Evaluated and incorporated several GAN-based deep learning methods to manipulate image segmentation and preserve high fidelity image.
- Designed a novel training method utilizing cycle consistency and unsupervised learning manner to train a generative model. Our proposed model outperformed other SOTA models on the kinship image generating task.

BioRoLa Lab, National Taiwan University   **Sep 2019 – Sep, 2021**
Topic: Frog Robot | Advisor: Pei-Chun, Lin   *Taipei, Taiwan*
- Designed an experimental system to capture frog jumping motion to collect real 3D dynamic data with two camera stereo matching technique.
- Incorporated scripts using Python and MATLAB to compute dynamics data from Lagrange equations analysis.

Work Experience

MediaTek   **July 2021 – Sep 2021**
Algorithm Intern   *Hsinchu, Taiwan*
- Utilized a deep-learning based matting algorithm to generate a high precision alpha matte.
- Researched and examined several deep-learning based matting algorithms by several specific metrics.
- Designed a self-supervised training manner with deep-learning based matting algorithm and improved the performance in both qualitative and quantitative tests.

Test Research, Inc. (TRI)   **July 2020 – Aug 2020**
Software Engineering Intern   *Taipei, Taiwan*
- Developed an algorithm to de-noise and generate high quality 3D structures taken from raw data of lidar detection. The algorithm serves as a pre-processing in detection defects of welding in printed circuit boards.

Publication

- Che-Hsien Lin, Hung-Chun Chen, Li-Chen Cheng, Shu-Chuan Hsu, Jun-Cheng Chen, Chih-Yu Wang, "StyleDNA: A High-Fidelity Age and Gender Aware Kinship Face Synthesizer" IEEE International Conference on Automatic Face and Gesture Recognition 2021
- Yi-Shun Lin, Chun-Fu Yang, Shu-Chuan Hsu, Chia-Yin Lin, Pei-Chun Lin, "Measurement and Modeling of Frog Jumping ", ARIS & NCAR 2021.

Selected Projects

Computer Vision Competition | *Python*   **Jun 2021**
- Designed a non-learning based network with warping technique to interpolate intermediate frame.
- Awarded Second Prize in the final project competition associated with *MediaTek* among 15 teams.

Computer Architecture | *Verilog, RISC-V*   **Jun 2021**
- Implemented single cycle CPU and re-designed the control of an ALU control signal to support more instructions.

Skills

Programming Languages: Python, C/C++, C#, MATLAB, Go, Verilog, Arduino, Latex, HTML/CSS

Familiar Packages/Tools: OpenCV, PyTorch, Pandas, NumPy, Scikit Learn, GitHub, Git, Flask