

Ru Wang

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Education

Shanghai Jiao Tong University (SJTU)

Shanghai, China

B.E. IN INFORMATION ENGINEERING

Sep. 2015 – Jun. 2019 (Expected)

- Major in Information Engineering and minor in Computer Science.
- Focus on digital multimedia, machine learning and computer networks.
- Major GPA: **88.12/100**.

Publications

Approximate Random Dropout for DNN training acceleration in GPGPU

ZHUORAN SONG, **RU WANG**, DONGYU RU, ZHENGHAO PENG, HONGRU HUANG, HAI ZHAO, XIAOYAO LIANG, LI JIANG

Accepted to DATE (Design, Automation and Test in Europe) 2019.

ThumbTrak: Continuous One-handed Thumb-on-fingers Input with a Ring

RU WANG, FANWEN JI, ZHONGHAO ZHAN, YUHUI ZHAO, CHENG ZHANG

In Preparation

Research Projects

ThumbTrak

Cornell University, Ithaca, NY

ADVISOR: PROF. CHENG ZHANG, INFORMATION SCIENCE

Jul. 2018 - PRESENT

- Developed an angle-based method to reconstruct thumb's moving trajectory on fingers through perspective transformation.
- Co-designed the form factors to mount the sensors on the user's hand and enhance user's wearing experience.
- Developed a testing system with drawing task, Fitts' Law task and Text entry task for user study.

Neural Network Acceleration Using Approximate Random Dropout

SJTU, Shanghai

ADVISOR: PROF. LI JIANG, ADVANCED COMPUTER ARCHITECTURE LAB (ACA)

Dec. 2017 - May. 2018

- Developed a time-efficient dropout algorithm to reduce useless computation in matrix multiplication.
- Implemented Approximate Random Dropout algorithm in fully-connected layer and convolution layer with Caffe.
- fully-connected layer with our dropout method is 2X faster than original one, with acceptable accuracy drop.

Virtual Dressing System

SJTU, Shanghai

ADVISOR: PROF. WEIYAO LIN, INSTITUTE OF MEDIA, INFORMATION AND NETWORK (M.I.N)

May. 2017 - Sep. 2017

- Integrated depth information (from Kinect V2) with 2D pose estimation from OpenPose to refine 3D skeleton.
- Developed an efficient algorithm to find the most possible depth estimation for the occluded body part.
- Developed a 3D pose collection system and a data annotation system with Unity3D, and built an RGBD human pose dataset.

RGBD-based Single Person 3D Pose Estimation

SJTU, Shanghai

ADVISOR: PROF. WEIYAO LIN, INSTITUTE OF MEDIA, INFORMATION AND NETWORK (M.I.N)

May. 2018 - PRESENT

- Developed a fast single person 2D pose estimator based on state-of-the-art methods using our dataset.
- Working on a novel 3D pose estimator using voxelized depth frames and 3D-convolution.

Driver's Cognitive Workload Analysis based on RNN

SJTU, Shanghai

ADVISOR: DR. NA RUAN

Mar. 2018 – PRESENT

- Built dataset with unified workload rating by clustering individual data including bio-information and self-ratings.
- Developed an RNN-based method to model sequential driving workload.

Internships

Clobotics

Shanghai, China

SOFTWARE ENGINEER INTERN

Nov. 2018 – PRESENT

- Working on a computer vision-based assistive system.

Honors & Awards

Academic Progress Scholarship (Nov. 2017)

Shanghai, China

Extracurricular Activities

SJTU GOA (Go-Abroad Association)

Shanghai, China

DIRECTOR OF PUBLICITY DEPARTMENT

Sep. 2017 - PRESENT

GOA is an official association in SJTU, dedicating in providing support and help for studying abroad.

- In charge of the production of posters and paintings.
- Publicized recent activities such as lectures or workshops related to grad application and career planning.

BTB x POP | Dance Installation Art

Shanghai, China

VOLUNTEER

Dec. 2017

The dance installation is created and performed by Fania Grigoriou, Chris Jäger, Garth Johnson, and Ingrid Kapteyn, produced by Beyond the Bund.

- Helped to arrange the stage and operate the devices.

chi K11 Art Space

Shanghai, China

VOLUNTEER

Dec. 2016

The art space holds regular art exhibitions, various forums for artists and unexpected opportunities for general public to get to know them.

- Guided the audience and explained the artworks for the audience.

Skills

Programming Languages Python, C/C++, C#, JAVA, Lua, Matlab

Practical Skills \LaTeX , HTML/CSS, jekyll, Git

Deep Learning Frameworks PyTorch, Caffe, Torch, TensorFlow

Design Toolkits Adobe Illustrator, Photoshop, Rhino