Wanze (Russell) Xie

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Education

Sept 2019 -
Jun 2021
Stanford University, *Master of Science in Computer Science*
Specialization: Artificial Intelligence (AI), GPA: 4.19/4.0. *Teaching: CS 231N*

Sept 2015 -
Dec 2018
University of California, San Diego, *Bachelor of Science in Computer Science*
Major GPA: 4.0/4.0, Overall GPA: 3.93/4.0. *Teaching: CSE 100, CSE 165, CSE 167, CSE 190*

Research and Work Experience

Jan 2020 -
Present
Stanford Vision & Learning Lab, *Graduate Researcher, advised by Prof. Fei-Fei Li*
○ MOMA: Led 8-person team for large-scale dataset curation and advanced action recognition model development
○ Intelligent ICU: Worked on computer vision algorithms for detecting doctor-patient activity in clinical setting.
○ Annotation Webtool: Developed cloud-based webtool for collaborative video annotation with Flask and ReactJS

Jun 2020 -
Aug 2020
Citadel LLC, *Software Engineer Intern*
○ Worked at Post-trade Management Tech team for data engineering and reconciliation
○ Designed and built Python-based micro-service on Kubernetes for processing transaction data and positions
○ Enhanced core data service with C++ to help business users quickly investigate broker outages.

Feb 2019 -
Aug 2019
Qualcomm Institute, Calit2, *Undergraduate Researcher*
○ Led 5-person computer vision research team on MRI medical image analysis for Crohn's Diseases diagnosis
○ Implemented ConvNets using TensorFlow, and developed infrastructure for Python to C++ APIs
○ Reduced colon-related surgical planning for clinicians at San Diego hospital by 1-2 hours, with our outcome software

Jan 2019 -
Jul 2019
Nanome Inc, *Software Engineering Intern*
○ Developed Nanome's CalcFlow augmented reality app on Magic Leap One using Unity and LuminSDK
○ Optimized graphics efficiency by reducing 60% draw call for mobile device with uncompromising visual effects
○ Designed sigmoid interpolation algorithm to improve smoothness in 3D UI animation for better experience

Sep 2017 -
Jan 2019
Immersive Visualization Lab, UCSD, *Undergraduate Researcher*
○ Published as first author to Electronic Imaging 2020 conference, advancing high dimensional data visualization
○ Worked with business team from PwC to improve chronic diseases progression analysis for 2000+ clients
○ Adapted app for HoloLens and iOS, and empowered PwC's first mixed reality international conference in Tokyo

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Selected Projects

Sept 2019 -
Jan 2020
Motion-Based Handwriting Recognition Hardware System, (Stanford CS229 **Best Poster Award**)
○ Developed a deep learning driven real-time handwriting recognition system based solely on pen motion.
○ Built the hardware using Arduino Uno R3, MPU9250 motion sensor, and custom 3D printed molds
○ Curated dataset with over 10,000 motion data samples from varied population, analyzed the performance of the state-of-the-art models, and achieved ~87% recognition accuracy using RNN and LSTM with autoencoder.

Jan 2018 -
Aug 2019
Remote Surgical Training System via Immersive Technology, (Co-Published to **CHI 2021**)
○ Built a cross-platform AR/VR online application for HoloLens and HTC Vive using C# and Unity3D
○ Optimized data transmission under low bandwidth for large 3D environment using depth map reconstruction
○ Conducted user study for 3D UI/UX design and experiment, contributing to paper submission for CHI 2021.

Oct 2016
Video Art Generation based on Style Transfer, (SD Hacks **1st Place & Cash Prize**)
○ Published first-of-its-kind web app in 2016 for real-time artistic style transfer for short videos and showered with prizes
○ Optimized image and video processing using OpenCV, and implemented style transfer with VGG-19 using PyTorch

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Professional Skills

Languages Python, C++, C#, Java, C, GLSL, JSON, JavaScript, HTML, CSS, SQL, Perl, MIPS Assembly
Tech Stack PyTorch, OpenCV, TensorFlow, Kubernetes, Docker, Redis, AWS, React, Flask, Arduino, OpenGL, Unity3D