XIAOCHEN ZHOU

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EDUCATION

Purdue University — *West Lafayette, IN*
- PhD of Science in Computer Science — *Aug 2020 – May 2024*

Washington University in St. Louis, GPA 4.0 — *St. Louis, MO*
- Master of Science in Computer Science — *Aug 2018 – May 2020*

Beihang University, GPA 3.65 — *Beijing, China*
- Bachelor of Science in Computer Science and Engineering — *Aug 2014 – May 2018*

PUBLICATION

- Xiaochen Zhou, Pascal Chang, Marie-Paule Cani, Bedrich Benes, "*Urban Brush: Intuitive and Controllable Urban Layout Editing*", accepted by UIST 2021.
- Biao Leng, Cheng Zhang, Xiaochen Zhou, Cheng Xu, Kai Xu, "*Learning Discriminative 3D Shape Representations by View Discerning Networks*", accepted by TVCG.
- Cheng Xu, Cheng Zhang, Xiaochen Zhou, Biao Leng, "*Improved Panoramic Representation via Bidirectional Recurrent View Aggregation for 3D model Retrieval*", accepted by *IEEE Computer Graphics and Application*.
- Cheng Xu, Biao Leng, Cheng Zhang, Xiaochen Zhou, "*Emphasizing 3D Properties in Recurrent Multi--view Aggregation for 3D Shape Retrieval*", accepted by AAAI 2018.

WORKING EXPERIENCE

Image-based Hard Case 3D Model Retrieval — *Facebook FRL, WA*
Research Scientist Intern — *Jun 2021 – Aug 2021*
- Deployed global-local region attention network for non-rigid object retrieval with PyTorch and Pytorch lightning
- Designed and optimized local feature self-attention unit for unique and rigid local region feature extraction.
- Rendered Sapien dataset, boosted ~2% retrieval accuracy on Sapien and ~5% on Facebook internal synthetic dataset.

Image extrapolation through patch match and GANs — *WashU VLG lab, MO*
Machine Learning Engineer — *Jun 2019 – May 2020*
- Implemented publications and projects related to image inpainting and extrapolation with Tensorflow.
- Designed and implemented novel U-Net based GANs for image reconstruction through image layout.
- Designed image extension method based on patch matching algorithms and optimized pix2pix method.
- Built end-to-end pipeline for layout detection, image extension and image reconstruction with Python.

Machine Learning Engineer on Re-identification — *Megvii Face ++ Co., Beijing, China*
Machine Learning Engineer — *Dec 2017 – Jun 2018*
- Deployed the ResNet framework and designed two network structures for vehicle re-identification.
- Implemented and optimized human re-identification models on vehicle re-identification datasets.
- Designed metric learning methods to boost the performance of vehicle re-identification different gesture.
- Deployed labeling and visualizing platform using Python and OpenCV for video and image datasets.

ACADEMIC EXPERIENCE

Style Transform Network with Local Details Optimization — *Washington University in St. Louis, MO*
Research assistant — *Feb 2019 –May 2019*
- Deployed image affine transformation with camera intrinsic and extrinsic calibration in python and OpenCV.
- Built pipeline for image affine transformation, image style transformation and local detail optimization.
- Implemented style transform network and optimized the artifacts noises generated from local style transform with neural network in Keras framework.

Outdoor Architecture Reconstruction through Single View — *Washington University in St. Louis, MO*
Research assistant — *Nov 2018 – Feb 2019*
- Implemented algorithms for computing camera calibration parameters with RANSAC method.
- Designed methods for generating normal vector of plants in camera and world coordinate system.
- Reconstructed 3D point cloud model through one single-view image based on search algorithm.
- Deployed the pipeline for user labeling, reconstruction and visualization platform with python and OpenCV.

View-based 3D Model Recognition via Deep Learning Method — *Beihang University, Beijing, China*
Research assistant — *Sep 2016 – Feb 2018*
- Devised neural networks for 3D models recognition through multiple rendered 2D images
- Designed two different self-attention units for unique feature extraction.
- Used LSTM in ordered feature extraction and aggregated extracted information as features for 3D shapes.

Skill Set

- **Program Language:** Python, Matlab, C++, HTML, CSS
- **Skills**: Tensorflow, Pytorch, Keras, OpenCV, Linux