

WEI JIANG

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I am a 4th year PhD student in hyperparameter tuning under the supervision of Prof. Kwang Moo Yi. I focus on visual localization, novel view synthesis, and 3d vision. I'm actively looking for full-time jobs in computer vision in production. My expected graduation time is **July 2022**.

Education

University of British Columbia

PhD in Computer Science

Vancouver, Canada

September 2020 — Present

University of Victoria

PhD in Computer Science (Transferred to UBC since Sept. 2020), GPA: 9.0/9.0

Victoria, Canada

September 2018 — August 2020

Boston University

MS in Computer Science, GPA: 3.8/4.0

Boston, MA

January 2017 — May 2018

Zhejiang University of Technology

BS in Software Engineering

Hangzhou, China

September 2012 — June 2016

Coursework: Image and Video Computing, Machine Learning, AI, Data Mining, Computer Graphics, Animation, Data Visualization, Operating Systems, Programming Languages, Algorithms, Data Structure, Numerical Modeling and Simulation, Computer Networks, Cloud Computing.

Selected Publications

NeuMan: Neural Human Radiance Field from a Single Video

arXiv 2022

Wei Jiang, Kwang Moo Yi, Golnoosh Samei, Oncel Tuzel, Anurag Ranjan

- Build high-quality animatable human model and static background model from a single video.
- Reconstruction with machined generated labels only, no extra devices or manual annotations required.

COTR: Correspondence Transformer for Matching Across Images

ICCV2021 Oral

Wei Jiang, Eduard Trulls, Jan Hosang, Andrea Tagliasacchi, Kwang Moo Yi

Acceptance rate: 3.4%

- End-to-end image correspondence framework based on Transformer. Trained with photo tourism data and generalized well to unseen data even deformable surfaces. Zoom-in strategy improves the spatial accuracy and prunes out low confidence correspondences.

Optimizing Through Learned Errors for Accurate Sports Field Registration

WACV 2020

Wei Jiang, Juan Camilo Gamboa Higuera, Baptiste Angles, Weiwei Sun, Mehrgan Javan, Kwang Moo Yi

- Developed an optimization-based framework to register sports field templates onto broadcast videos. The framework can provide highly accurate template-frame registration;

Linearized Multi-Sampling for Differentiable Image Transformation

ICCV 2019 Oral

Wei Jiang, Weiwei Sun, Andrea Tagliasacchi, Eduard Trulls, Kwang Moo Yi

Acceptance rate: 4.3%

- Developed a novel image sampling method for differentiable image transformation in deep neural networks. The sampling method can provide better gradients with respect to the grid coordinates;

Depth-aware Image Vectorization and Editing

CGI 2019

Shufang Lu, Wei Jiang, Xuefeng Ding, Craig S. Kaplan, Xiaogang Jin, Fei Gao, Jiazhou Chen

- Developed an image vectorization algorithm that operates on RGBD images and uses both color and depth edges to define vectorized paths. The algorithm can keep the contours of the objects in the scene, thus provide a better image reconstruction;
- Developed the prototype of an object level diffusion curve image editor;

Experiences

Research Intern

— Research on neural rendering methods

Apple, AI/ML
May 2021 — Present

- Research on neural rendering methods.

Research Intern

— Fast human pose estimation

Huawei, Noah's Ark Lab
May 2020 — September 2020

- Developed modularized human pose estimation pipeline for research purposes.
- Worked on single stage human pose estimation and tracking in videos.
- Online adaption using teacher-student models.

Teaching Assistant

— CSC 684B Introduction to Deep Learning for Computer Vision

University of Victoria
January 2020 — April 2020

- Updated the skeleton code and solution in Python;
- Developed the unittest module for grading;

— CSC 305 Introduction to computer graphics

January 2019 — April 2019

- Prepared tutorial materials, designed and developed the skeleton code in C# with Unity, and delivered the lab;
- Topics including ray tracing, texture mapping, procedural terrain generation, flocking simulation, and more;

Algorithm Development Intern

— Motion capture system development

KATVR
May 2018 — August 2018

- Preprocessed a synthetic dataset, used CycleGAN to add realism to the images, added random background during training. Implemented a variant of FCN in PyTorch to segment human body parts in the depth map;
- Developed a multi-task CNN model to segment human body parts and regress joint locations, implemented a multi-constrain loss function to improve the performance. Trained model has good generalization on real data;
- Developed a pipe based IPC, transport image data from C++ to Python and inferred joint location data from Python back to C++. This architecture achieved real-time inference, and VR game interaction(walk);

Backend Development Intern

— Back-end development for QuSandbox website.

AdaptiveAlgo Systems Inc.
May 2017 — August 2017

- Developed a service that can dynamically deploy Jupyter-notebook-based containers on AWS for education purposes, implemented a RabbitMQ-based load balancer for concurrent access and the customized back-end logic for spawning and authentication procedures;
- Developed a pipeline that automatically deploy the customized containers to provide machine learning as a service via RESTful APIs;

Skills

Languages: Python, Processing, C++

Libraries: Numpy, Pytorch, OpenCV, PCL, CGAL, Eigen, GLM, OpenGL

Tools: Git, Docker, AWS, Linux

Contributor: Kornia, VisPy, AT3D