Chang Gao

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Education

Carnegie Mellon University — Pittsburg, PA
Master of Science in Computer Vision — 08/2018 - 12/2019
- Selected Coursework: Computer Vision, Machine Learning, Math Fundamentals for Robotics

The University of Hong Kong — Hong Kong
B.Eng. in Computer Science (First Class Honors), Minor in Mathematics; GPA: 3.82/4.30 — 09/2014 - 06/2018
- Two terms of exchange study at UC Irvine with a GPA of 4.15/4.00
- Awards: 4th Place in ACM Hong Kong (Team Leader, 2016), Honorable Mention in MCM (Team Leader, 2016)

Professional Experience

Indeed — Tokyo, Japan
Software Engineering Intern — 06/2017 - 08/2017
- Developed a Python framework to estimate the effectiveness of new bidding algorithms
- Designed multiple machine learning and time series analysis models using SciPy and sklearn to analyze historical bidding data and predict the influences of new bidding algorithms on future metrics
- Reduced raw testing time of new bidding algorithms from around two weeks to several minutes

Guangdong Flying Enterprise Internet Technology — Zhuhai, China
Software Engineering Intern — 06/2016 - 07/2016
- Customized and maintained office automation systems for large corporate offices in Java EE
- Solved 7 customer cases in only two months, with customizations on servers, databases, websites, and/or apps

Research Experience

Real-time Coherent Video Style Transfer Network — Hong Kong
Thesis, The University of Hong Kong — 09/2017 - 04/2018
- Designed an optical-flow-based deep learning pipeline for video style transfer in PyTorch, which can generate temporally consistent stylized videos while maintaining artistic styles perceptually similar to the style target
- Overall inference speed achieved 235 frames per second (FPS) on a single modern graphics card

AI for Super Mario Playing in Minecraft — Irvine, CA
Research Project, UC Irvine — 04/2017 - 06/2017
- Co-designed a reinforcement learning maze solver with Minecraft Malmo API and TensorFlow, which utilizes Inception-ResNet blocks for feature extraction and ConvLSTMs for spatial feature map registration
- Created a Super-Mario-like maze generator with physics engine for actual game playing and AI testing

Rapid Regional Tsunami Damage Recognition Using Deep Neural Networks — Irvine, CA
Research Assistant, UC Irvine — 02/2017 - 04/2017
- Developed a deep learning framework for tsunami damage recognition using remote sensing data
- Investigated traits and feature maps of post-event SAR imagery using Caffe and MATLAB
- Improved speed and accuracy of SAR imagery recognition with wide residual networks

Deep Learning Based Sketching System for 3D Face and Caricature Modeling — Hong Kong
Research Assistant, The University of Hong Kong — 08/2016 - 01/2017
- Developed a deep-learning-based sketching system for 3D face modeling using Caffe, Qt, OpenCV, and OpenGL
- Greatly reduced time and effort creating 3D face models for graphic designers
- Co-designed a convolutional neural network (CNN) with bilinear encoding for inferring 3D face models from 2D sketches, which achieved state-of-the-art inference results with a mean error of 2.04mm

Publications

1. **C. Gao** et al, "ReCoNet: Real-time Coherent Video Style Transfer Network", ACCV 2018 (Oral, to appear)
2. Y. Bai and **C. Gao** et al, "A Framework of Rapid Regional Tsunami Damage Recognition from Post-event TerraSAR-X Imagery Using Deep Neural Networks", IEEE Geoscience and Remote Sensing Letters, Vol. 15, No. 1, Page 43-47, 2018
3. X. Han, **C. Gao**, and Y. Yu, "DeepSketch2Face: A Deep Learning Based Sketching System for 3D Face and Caricature Modeling", ACM Transactions on Graphics (SIGGRAPH 2017), Vol. 36, No. 4, Article 126, 2017

Skills

Coding: Python, C/C++, JavaScript, Java, MATLAB, HTML, SQL, Haskell (ranked in proficiency)
Toolkits: PyTorch, Caffe, Keras, TensorFlow, sklearn; OpenGL, OpenCV; Qt; Django, Node.js; MySQL, MongoDB; Git