Ruei-Bang Chen

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EDUCATION

The University of Texas at Austin (UT Austin) — Austin, TX
M.S. in Computer Science — *Aug. 2018 - Expected May 2020*

National Chiao Tung University (NCTU) — Hsinchu, TW
B.S. in Electrical and Computer Engineering, Minor in Computer Science, GPA: 4.11/4.3 — *Sep. 2012 - Jun. 2016*

Carnegie Mellon University (CMU) — Pittsburgh, PA
Exchange Student in Electrical and Computer Engineering, GPA: 3.73/4.0 — *Jan. 2016 - May 2016*

RELEVANT EXPERIENCE

UT Austin [Java] — Austin, TX
Teaching Assistant for CS 378 Modern Web Applications — *Sep. 2018 - Present*
- Instructor: Prof. Devdatta Kulkarni

Academia Sinica [Python, TensorFlow, PyTorch] — Taipei, TW
Research Assistant, Computer Vision Lab, Institute of Information Science — *Jul. 2017 - May 2018*
- Advisor: Dr. Tyng-Luh Liu
- Produced sharp and realistic images by training a generative adversarial network with multiple loss functions for image completion (recover random masked region in an image)
- Researched object detection and semantic segmentation on 360-degree images (equirectangular and cubemap)

ACADEMIC HONORS

Best Project Award in Web Application Development, CMU — Pittsburgh, PA
Scholarships for Excellent Students to Study Abroad, Ministry of Education — Taipei, TW
Exchange Student Scholarship, Dept. of ECE, NCTU — Hsinchu, TW
Academic Achievement Award (top 5% in 2014 spring semester), NCTU — Hsinchu, TW

TECHNICAL SKILLS

Programming Languages: C++, Python, Java, MATLAB, JavaScript, MySQL

Tools and Technologies: Linux, Git, TensorFlow, PyTorch, Django, OpenMP, OpenGL

SELECTED PROJECTS

Multiplayer Web Tank Game (CMU) [Django, Python, Javascript, Git]
- Detected collisions with Box2d physics engine and rendered the scene by HTML5 canvas and JQuery
- Featured a store to upgrade tanks, a real-time chatroom by Django Channels, and user account management
- Designed backend routing, database and deployed the web application on both Heroku and Amazon AWS EC2

Computer Vision Projects (CMU) [MATLAB]
- Detected edges by Hough Transform to obtain the number of "votes" for the possible edges in an image
- Built a scene classification system with k-means, bag of visual words, and KNN algorithm
- Developed an augmented reality application using planar homographies with RANSAC algorithm
- Recovered 3D structure by triangulation (sparse reconstruction) and stereo rectification (dense reconstruction)
- Tracked objects in videos with Lucas-Kanade, Matthew-Baker, and Mean-Shift Trackers

Parallel Principal Component Analysis Applied to Surveillance Video (NCTU) [C++, OpenMP]
- Parallelized singular value decomposition (SVD) by one-sided Jacobi method
- Exploited tall-and-skinny SVD to avoid unnecessary computations and further accelerate the program
- Reduced 54% of total execution time (including processing input and output)

Monopoly (NCTU) [Java]
- Devised a game where players competed to buy and upgrade estates to collect rent and avoid bankruptcy
- Featured a stock market, banks, vehicle stores, Chance or Community Chest spots
- Implemented rule-based AI players that made reasonable decisions when they bought estates and stocks