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, JavaScript]   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