Ruei-Bang Chen

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Education

The University of Texas at Austin (UT Austin) Austin, TX
M.S. in Computer Science, GPA: 3.93/4.0 *Aug. 2018 - Expected May 2020*

National Chiao Tung University 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 Pittsburgh, PA
Exchange Student in Electrical and Computer Engineering with scholarships, GPA: 3.73/4.0 *Jan. 2016 - May 2016*

Experience

LinkedIn [Python, Flask, SaltStack, Kafka, Samza, MySQL, Perf, Flame Graph, Git] Sunnyvale, CA
Software Engineer Intern (Traffic Infrastructure Team) *May 2019 - Aug. 2019*

- Developed an on-demand profiling web app for C++ applications that can visualize and render the profiling results (flame graphs) in the browser to optimize or debug C++ programs across the entire company
- Designed and implemented an automated profiling and alert system that checks CPU consumed by Apache Traffic Server, triggers the profiling and sends alert emails automatically when it goes beyond threshold

UT Austin [Spring, REST, Hibernate, AWS EC2, Heroku, Cache Optimization, Pthread, OpenMP] Austin, TX
Teaching Assistant, Department of Computer Science *Sep. 2018 - May 2019*

- CS 378 Modern Web Applications: built web applications with Java backend, MySQL and cloud deployment
- CS 377P Programming for Performance: focused on exploiting cache locality and software parallelism

Academia Sinica [Python, NumPy, TensorFlow, PyTorch, CNN, Image Completion, Object Detection] Taipei, TW
Research Assistant, Computer Vision Lab, Institute of Information Science *Jul. 2017 - May 2018*

- Produced sharp and realistic images by training a generative adversarial network (GAN) with multiple loss functions for image completion (recovered random masked region in an image)
- Researched object detection algorithms and their applications on 360-degree images (equirectangular and cubemap)

Selected Projects

Multiplayer Web Tank Game [Django, Python, JavaScript, MySQL, AWS EC2, Heroku, 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

Visual Question Answering [Python, PyTorch, RNN, Computer Vision, Natural Language Processing]

- Utilized bottom-up attention (RoIs with higher probability in object detection model) to gain better image features
- Achieved 63.89 evaluation scores on VQA v2.0 validation set by combining both top-down and bottom-up attention

Parallel Principal Component Analysis Applied to Surveillance Video [C++, OpenMP]

- Parallelized singular value decomposition (SVD) by one-sided Jacobi method
- Exploited tall-and-skinny SVD to further accelerate the program and avoid unnecessary computations
- Reduced 54% of total execution time (including time for pre-processing and post-processing) using multi-threading

Monopoly [Java, Multithreading, GUI Components]

- 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 and background music
- Implemented rule-based AI players that made reasonable decisions when they bought estates and stocks

Skills

Programming Languages: C / C++, Python, Java, MATLAB, SQL (MySQL / PostgreSQL), JavaScript

Tools and Technologies: Git, TensorFlow, PyTorch, Django, Flask, Spring, RESTEasy, AWS EC2, Heroku, OpenMP

Honors and Awards

Best Project Award in Web Application Development Course, Carnegie Mellon University Pittsburgh, PA
Academic Achievement Award (top 5% in spring 2014), National Chiao Tung University Hsinchu, TW