Wei-Cheng Wang

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Education

University of Southern California — Los Angeles, California
Master of Science in Computer Science — **Aug 2024 - May 2026**

National Yang Ming Chiao Tung University — Hsinchu, Taiwan
Bachelor of Science in Computer Science | GPA: 4.0/4.3 — **Sep 2019 - Jun 2023**

Technical Skills

Programming: C, C++, Python, HTML, CSS, JavaScript
Knowledge & Skills: AI & Machine Learning, Computer Security, Network Engineering
Tools & Frameworks: Pthreads, OpenMP, MPI, NumPy, scikit-learn, PyTorch, Flask, Git, Docker, LaTeX
Languages: Native in Mandarin; Fluent in English

Work Experience

Advantech — Taipei, Taiwan
Software Development Intern — **Jun 2022 - Sep 2022**

- Collaborated with software developers to design products for intelligent manufacturing.
- Updated an existing ResNet model for image classification and published FasterRCNN, whose backbone was MobileNetV3 and RetinaNet, for object detection via PyTorch.

Projects

Wi-Fi Rate Control on Ryu and OVS | *Python, Shell Script, Ryu, OVS*

- Collected Wi-Fi information, including MAC address, IP address, and average signal strength.
- Compiled data into a packet of an OpenFlow protocol and sent it to a controller port.
- Parsed information on Ryu and calculated SNR by assuming signal noise was -90 dBm.
- Configured flow rules on Ryu to drop packets, adjusting a number of forwarded ports close to the SNR ratio.

Ransomware Propagation and Payload | *Python, Shell Script*

- Acted as an attacker and cracked a victim's SSH password via dictionary attack.
- Created a compression virus with ransomware worm propagation to infect "cat" command.
- Prepared ransomware payload to encrypt picture files in JPG format and triggered a pop-up window displaying a message requesting ransom.

Accelerating K-means Clustering with Parallel Implementation | *Python, Shell Script, C++, OpenMP, MPI*

- Collaborated with a team to enhance K-means clustering efficacy via OpenMP, MPI, and hybrid methods.
- Demonstrated improvements in K-means clustering via three methods, with pure MPI implementation reaching optimal performance.

Analysis of EEG using Deep Learning | *Python, E-Prime, MATLAB*

- Teamed up with a group to analyze accuracy across different periods: before, during, and after index fingers lift.
- Designed an experiment collaboratively via E-Prime to collect EEG signals from left and right index fingers; afterward, filtered out noise and irrelevant frequency bands via EEGLAB in MATLAB.
- Coordinated with team members to train and evaluate signals with EEGNet model, achieving approximately 72% accuracy in predicting finger movements.

When BERT meets Google Comments | *Python, PyTorch, Beautiful Soup, PyQt*

- Worked in a team to develop BERT model predicting sentiment and categories of comments from Google Maps.
- Participated in web scraping tasks to gather data from Google Maps; divided comments into positive and negative based on star ratings and trained via BERT model.
- Developed a simple UI interface collaboratively via PyQt for comment entry, achieving approximately 90% accuracy in sentiment and category prediction.