Chih-Ho Hsu

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Research Interests

Wireless Communications, Resource Allocation, Edge Computing, Multimedia Streaming, Social Network, SDN, RL, VR

Education

National Taiwan University (NTU) *Sep. 2016 – Jan. 2021(expected)*

- Bachelor of Science in Electrical Engineering, GPA: 3.3/4.0 (Overall)

Taipei Municipal Chien Kuo High School *Sep. 2013 – Jun. 2016*

- Recipient of Igarashi Chikara Scholarship for Academic Excellence

Publications

Journal Papers

- [1] Y. Chiang, **C. Hsu**, and H. Wei, "Collaborative Social-Aware and QoE-Driven Video Caching and Adaptation in Edge Network," submitted to *IEEE Transactions on Multimedia*, 2020. (1A 2AQ in 2st round) [PDF] [Demo]
- [2] Y. Chiang, Y. Chao, **C. Hsu**, C. Chou and H. Wei, "Virtual Network Embedding With Dynamic Speed Switching Orchestration in Edge Network," in *IEEE Access*, vol. 8, pp. 84753-84768, 2020. [PDF]
- [3] Y. Zhang, Y. Chiang, **C. Hsu**, Y. Chao, and H. Wei, "Management and Orchestration of Edge Computing: A survey", *under preparation.*
- [4] **C. Hsu**, Y. Chiang and H. Wei, "Hybrid Adaptive Learning Framework for Parallel Task Offloading in Edge network", *under preparation*.

Conference Papers

- [5] **C. Hsu**, Y. Chiang, and H. Wei, "Entropy-based QoS Routing for Software-Defined Edge Network," in *IEEE Globecom Workshops*, to appear, 2020. [PDF]
- [6] Y. Chao, Y. Chiang, **C. Hsu**, C. Chou and H. Wei, "Satellite-UAV-MEC Collaborative Architecture for Task Offloading in Vehicular Networks," in *IEEE Globecom Workshops*, to appear, 2020. [PDF]
- [7] **C. Hsu**, "MEC-Assisted FoV-Aware and QoE-Driven Adaptive 360◦ Video Streaming for Virtual Reality," in *IEEE International Conference on Mobility, Sensing and Networking (MSN)*, to appear, 2020. [PDF]
- [8] **C. Hsu**, Y. Chiang, and H. Wei, "QoE-Driven Interest-Based Video Caching and Adaptation in 5G Mobile Edge Network," *poster in Taiwan Telecommunication Annual Symposium*, 2020. [PDF]

Experiences

Wireless Mobile Network Laboratory, NTU *Sep. 2019 – Present*

Research Assistant

- Studied emerging techniques in B5G mobile network: Non Orthogonal Multiple Access (NOMA), Software Defined Network (SDN), Network Function Virtualization (NFV), authored papers [2, 3, 5]
- Researched on computation offloading for AR: dynamic network slicing based on traffic prediction, joint radio and computing resource allocation for RAN by Deep Reinforcement Learning (DRL), authored papers [4, 6]
- Researched on adaptive streaming in edge computing system: collaborative video caching, QoE-driven video transcoding and video adaptation, popularity prediction from information dissemination on social networks, authored papers [1, 8]

Cinnamon AI Taiwan Inc., Taipei *Jul – Aug. 2019*

Summer Internship

- Worked in backend team: database maintenance, online serving maintenance with Docker and Tensorflow
- Investigated state-of-art Convolution Neural Network (CNN): loss function design and data preprocessing for MobileNetv3

BroadMission Technology, Taipei *Jan. – Jul 2019*

Software engineer

- Developed functional Chatbot: user classification and customized response, hierarchical control interface
- Developed customized DevOps tool: automated CICD tracking using Hygiea, Jenkins, Maven, SonarQube, Jmeter
- Developed home supervision system: webcam streaming platform, real-time object recognition and anomaly detection

Foxconn Advanced Communication Academy, Taipei *Sep. 2018 – Jul 2019*

Internship

- Developed commercial platform for network infrastructure management: orchestrate edge hosts with OpenStack and Kubernetes, implemented network microservices instantiation and policy-driven lifecycle management with ONAP

Advanced Material Research Group, NTU *Feb. – Aug. 2017*

Research Assistant

- Implemented simulation for plant factory: automatic measurement and control of temperature, moisture, light, water, gas

Skills

Programming:	Python, C++, Java, PHP, JavaScript, C#, MATLAB
Framework:	Vue.js, Django, Flask, OpenCV, Tensorflow, MySQL, AWS, Azure, Docker, ONAP, OpenStack, Jenkins, git
Software:	Unity, Android Studio, SolidWorks, Arduino, Quartus II, PSpice, LabVIEW