

# Yu-Tai Lin

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## EDUCATION

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### Master of Science in Computer Science

*National Tsing Hua University*

Sep. 2016 - Jun. 2018

*Hsinchu, Taiwan*

- Graduation GPA: 4.15/4.3

- Courses: Parallel Programming, Multimedia Coding, Data Science, Cloud Computing, Massive Data Analysis, Deep Learning

### Bachelor of Science in Engineering Science

*National Cheng Kung University*

Sep. 2012 - Jun. 2016

*Tainan, Taiwan*

## RESEARCH EXPERIENCES

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### Research Assistant in SNACLab

*Academia Sinica, Taiwan*

Aug. 2020 - Present

*Taipei, Taiwan*

- Propose a greedy-based bandwidth allocation algorithm for intermittent wireless communication.
- Develop a real-world testbed for an intermittent wireless communication system.
- Propose an ensemble machine learning model (NN+XGBoost) to detect network anomalies.
- Advisor: Prof. Chih-Yu Wang

### Research Assistant in VCLab

*National Tsing Hua University*

Sep. 2016 - Aug. 2018

*Hsinchu, Taiwan*

- Proposed a cluster-based Autoencoder model to predict popular video clips for 5G small cell caching.
- Developed a video clip data collection and pre-processing system.
- Advisor: Prof. Jia-Shung Wang

## PUBLICATIONS

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- [1] Yu-Cheng Hsiao, **Yu-Tai Lin**, and Chih-Yu Wang. “Joint Bandwidth Allocation and Computation Offloading in Multi-Access Edge Computing with Battery-less Intermittent Devices”. *IEEE Transactions on Mobile Computing*, (Submitted).
- [2] **Yu-Tai Lin**, Yu-Cheng Hsiao, and Chih-Yu Wang. “Enabling Mobile Edge Computing for Battery-less Intermittent IoT Devices”. In *2021 IEEE Global Communications Conference (GLOBECOM)*, 2021.
- [3] Tzu-Hsin Yang, **Yu-Tai Lin**, Chao-Lun Wu, and Chih-Yu Wang. “Voting-Based Ensemble Model for Network Anomaly Detection”. In *2021 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, 2021.
- [4] **Yu-Tai Lin**, Chia-Cheng Yen, and Jia-Shung Wang. “Video Popularity Prediction: An Autoencoder Approach With Clustering”. *IEEE Access*, volume 8, 2020.
- [5] Yi-Ting Chen, Chia-Cheng Yen, **Yu-Tai Lin**, and Jia-Shung Wang. “Cooperative Caching Plan of Popular Videos for Mobile Users by Grouping Preferences”. In *16th International Conference on Pervasive Intelligence and Computing (PiCom)*, 2018.

## AWARDS & HONORS

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- 1st place (out of 87 teams from around the world) of ZYELL-NCTU Network Anomaly Detection

Challenge, IEEE ICASSP Grand Challenge, 2021.

- Undergraduate Research Creativity Award, Ministry of Science and Technology, Taiwan, 2016.
- Research Grant For Undergraduate Students, Ministry of Science and Technology, Taiwan, 2015.

## WORK EXPERIENCES

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### Software Engineer

**Nov. 2018 - Aug. 2020**

*Synology Inc.*

*New Taipei, Taiwan*

- **Led user data collection and analysis cloud service design and maintenance.**
  - Optimized cloud service code to improve the stability and performance.
  - Optimized AWS services infrastructure to reduce costs by 30%.
  - Initiated an Infrastructure as Code design to deploy the cloud service quickly.
  - Created a monitoring system to improve service's responsiveness and visibility.
- **Initiated a package installation framework for Docker-based applications to protect the Synology NAS system.**
  - Designed a framework to help Docker applications create docker-compose files.
  - Prevented Docker applications from getting root access to protect the NAS system.
- **Managed package porting and maintenance for Synology NAS.**
  - Optimized the package installation framework.

### Software Engineer (Intern)

**Jul. 2014 - Aug. 2014**

*Gigabyte Inc.*

*New Taipei, Taiwan*

- Collaborated with a team to build a PC-cluster environment.
- Conducted experiments to compare performance between PC-cluster and server environments.

## SELECTED PROJECTS

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### Network Anomalies Detection

**ICASSP Grand Challenge, 2021**

- Led a team with 3 members to develop a machine learning model to detect network anomalies.
- Organized team cooperation and introduced code review and Git to the team.
- Won 1st place (out of 87 teams globally) of ICASSP Grand Challenge.

### Smart Door System

**Cloud Programming course project, 2017**

- Collaborated with 2 teammates to design a cloud service based on AWS.
- Led server back-end development and IoT device development.

### Rating System For Rehabilitation Gesture Correctness

**Undergraduate research project, 2015**

- Built a system using an RGB-D sensor to improve correctness of rehabilitation gestures.
- Designed a method to calculate rehabilitation gesture correctness.
- Won the 2016 Undergraduate Research Creativity Award from the Ministry of Science and Technology, Taiwan.

## LEADERSHIP EXPERIENCE

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### Team Captain

**Nov. 2013 - Aug. 2015**

*Engineering Science Department Basketball Team*

*Tainan, Taiwan*

- Led the department team to the quarterfinals in the Inter-departmental Cup.

## TECHNICAL SKILLS

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- **Programming Languages:** Python, C/C++, JavaScript, PHP, Matlab
- **Operating System:** Linux
- **Database:** MySQL, SQLite, Elasticsearch, Prometheus
- **Others:** AWS, Docker, Git, Tensorflow, GDB, Grafana, Flask