Yu-Fan Teng

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RESEARCH INTEREST

Integrated Circuit (IC) Design; Architecture and Embedded Systems; Deep learning application in Computer Vision

EDUCATION

National Taiwan University (NTU)   *Taipei, Taiwan*

Undergraduate Program, Department of Electrical Engineering (NTUEE)   *09/2016 – Present*

- Overall GPA: 3.70/4.0
- GPA for the last 60 credits: 3.97/4.0
- IC Design related GPA: 3.93/4.0
    Integrated Circuit Design (A); Digital System Design (A); Digital Circuits Lab (A); Integrated Circuit Design Lab (A)

RESEARCH EXPERIENCE

Microsystem Research Lab, NTU *(Advisor: Prof. Tzi-Dar Chiueh)*   *Taipei, Taiwan*

Undergraduate Research Student   *02/2019 – Present*

Topic 1: Digital signal processor IC related to MMSE Equalizer with Perfect ISI Information
- Implemented the whole IC design Flow from RTL to post-layout
- Taped out the design by Taiwan Semiconductor Research Institute (Accuracy: 99 percent)

Topic 2: FloatSD machine learning acceleration hardware solution
- Developed hardware format of dropout and batch normalization to accelerate the training process of CNN

Media IC and System Lab, NTU *(Advisor: Prof. Shao-Yi, Chien)*   *Taipei, Taiwan*

Undergraduate Research Student   *09/2018 – 01/2020*

Topic: Deep learning tracking algorithm for multiple object tracking
- Created our own novel deep learning tracking algorithm to track and tag multiple objects
- Applied it on 2020 Multiple Object Tracking Contest

Digital System Design Course *(Instructor: Prof. An-Yeu Wu)*   *Taipei, Taiwan*

Teaching Assistant   *01/2020 – 06/2020*

- Optimized student's MIPS baseline homework and testbench
- Wrote automation to grade student's homework automatically

INTERNSHIP EXPERIENCE

McKinsey & Company   *Taipei, Taiwan*

Analyst Intern | Design to Value team   *07/2020 – Present*

- Analyze client's product using teardown analysis and cleansheet modeling
- Solved 11 client cases with global consultants

Intel Corporation   *Taipei, Taiwan*

Hardware Engineer Intern | Non-Volatile Solutions Memory Team   *06/2019 – 01/2020*

- Designed and developed automated hardware validation tools for SSD firmware and improved the efficiency of validation by 50 percent
- Fixed 15 issues of SSD validation in collaboration with the US team

DBS Bank   *Taipei, Taiwan*

T&O Support Analyst | Technology and operation team   *02/2020 – 03/2020*

- Analyzed data for business analysis team using QlikView and SQL
- Developed strategy for Iserve system call issue with banking team and credit card team

Ganzin Technology   *Taipei, Taiwan*

Product Development Engineer Intern | Eye-tracker Development Team   *09/2018 – 06/2019*

- Won second place at Taiwan Pitch Night
- Developed a light detection application project of Eye-tracker, and exhibited on COMPUTEX/INNOVEX 2019

PUBLICATION

Under review

- Yu-Fan Teng*, Yu-Sheng Ting*, Tzi-Dar Chiueh, "Batch Normalization Processor Design for Convolution Neural Network Training and Inference", *Submitted to **2021 IEEE International Symposium on Circuits and Systems (ISCAS)***

<u>* Indicates equal contribution</u>

CONTEST AND AWARD

NTU Outstanding Performance Scholarship   *Taipei, Taiwan*
15 out of 7000+ Students at NTU (NTD 50,000)   *10/2020*

- Honored of academic and research excellence at National Taiwan University

Undergraduate Innovation Award   *Taipei, Taiwan*
Second Prize   *07/2020*

- Proposed our research on Batch Normalization Processor Hardware Design

IC Design Contest   *Hsinchu, Taiwan*
Honorable Mention Prize (3rd place)   *07/2020*

- Represented NTU in the national competition held by the Ministry of Education and won the 3rd place

MakeNTU (The largest nationwide hardware hackathon)   *Taipei, Taiwan*
Cathay Financial Holding Business Award (NTD 20,000)   *05/2019*

- Used techniques such as RPI, CNN, SVM, and Azure (Microsoft) to create a Supermarket AI Assistant

LEADERSHIP ROLES

Startup - GOGET   *Taipei, Taiwan*
Founder & Web developer   *11/2019 – Present*

- Founded with workers from McKinsey, BCG, Shopee, and Microsoft
- An online platform to help college students and even startup companies find expertise to deal with their current project problems and find partners
- 10000+ users per week, still increasing

NTUEE Badminton Team   *Taipei, Taiwan*
Captain   *05/2018 – 05/2019*

- Managed the whole team with nearly 70 people and won the 2018 North Taiwan EE Cup Champion

NTUEE Camp   *Taipei, Taiwan*
Leader of the event planning department   *08/2017*

- Organized the whole activities with 100 +workers; activities included visiting Google and NVIDIA headquarters

Sea Group and Garena World Overseas Visit Program   *Singapore and Thailand*
Delegate   *09/2019*

- Selected as one of the 20 representatives of Taoyuan City from 1000+ candidates.
- Visited 7 startup companies; learned and exchanged ideas from CTO in Sea Group Singapore and PM in Garena Thailand.