# Tommy K.W. **Ho**

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## Education

### University of Washington (UW) — *Seattle, WA*

Computer Science, M.Sc. in Technology Innovation (MSTI) — *Sep. 2019 - Mar. 2021*

- GPA: 3.74/4.0
- Selected Relevant Coursework: Programming For Digital And Physical User Interfaces, Design Thinking Studio, Hardware Software Lab, Managing Data And Signal Processing

### National Tsing Hua University (NTHU) — *Hsinchu, TW*

B.Sc. in Computer Science — *Sep. 2014 - Jun. 2018*

- GPA: 3.4/4.0
- Selected Relevant Coursework: Graphics Programming and Applications, Large-Scale Machine Learning, Compiler Design, Computer Graphics, The Cutting Edge of Deep Learning, Natural Language Processing Lab

## Professional Experience

### NVIDIA — *Taipei, TW*

AI Developer Technology Engineer Intern — *Aug. 2018 - Jan. 2019*

- Conducted research on object detection and semantic segmentation methodologies on current and next-generation GPU architectures
- Presented research and projects result to software engineers and solution architects on NVIDIA DevTech APAC team in weekly meetings
- Collaborated with a senior software engineer to provide best AI solutions using GPUs on current and future problems which key customers are solving
- Refined the training and inference workflow of deep learning with platforms powered by NVIDIA such as DALI and TensorRT. Achieved 50% acceleration on data preprocessing stage on DGX-2

### Elsa Lab, National Tsing Hua University — *Hsinchu, TW*

Research Assistant (Supervised by Prof. Chun-Yi Lee) — *Feb. 2018 - Jan. 2019*

- Conducted research on video segmentation, robotics, and deep reinforcement learning
- Responsible for methodologies design, experiments implementation, results evaluation, editing and writing papers aimed at international conferences and journals

### Alfred Labs Inc. — *Taipei, TW*

Data Science and Machine Learning Intern — *Dec. 2017 - Jun. 2018*

- Conducted research on deep learning frameworks (e.g. TensorFlow Lite, TensorFlow Mobile, CoreML) for mobile phones, and computationally efficient image classification, object detection, and face recognition methodologies
- Conducted on cutting-edge deep learning frameworks and toolkits, such as the Intel Movidius Neural Compute Stick and Google AIY Vision Kit, designed for mobile embedded devices (e.g. Raspberry Pi)
- Architected a pilot project deploying smart surveillance system with face recognition neural network on Raspberry Pi 3, which is improved by 80% on efficiency and scalable compared to previous prototypes

### High5.ai — *Taipei, TW*

Software Developer Intern — *July. 2017 - Oct. 2017*

- Conducted research on AI chatbot's production efficiency, semantic analysis and text generation methodologies
- Delivered an upgraded scalable AI chatbot with inference speed 1000% faster and a word embedding covering 98% of domain knowledge
- Solved technical issues on AWS and maintained the operation of the service

### AI Lab, National Tsing Hua University — *Hsinchu, TW*

Undergraduate Researcher (Supervised by Prof. Von-Wun Soo) — *Feb. 2017 - Jan. 2018*

- Built an AI storyteller generating Chinese stories based on MIT Media Lab's ConceptNet 5 with Monte Carlo tree search and sequence-to-sequence learning (Seq2Seq). Our storyteller covers over 70,000 words and millions of possible plots
- Conducted research on Monte Carlo tree search, AI storyteller agent model, natural language processing and deep learning methodology such as neural machine translation and text generation

## Publication

**A Distributed Scheme for Accelerating Semantic Video Segmentation on An Embedded Cluster**

*IEEE International Conference on Computer Design (ICCD)*

Hsuan-Kung Yang*, Tsu-Jui Fu*, Po-Han Chiang†, **Kuan-Wei Ho**†, Chun-Yi Lee

*2019*

- ICCD is a top conference in computer system
- Full paper oral presentation
- * † indicate equal contribution

**Visual Relationship Prediction via Label Clustering and Incorporation of Depth Information**

*1st Person in Context (PIC) Workshop, European Conference on Computer Vision (ECCV)*

Hsuan-Kung Yang, An-Chieh Cheng*, **Kuan-Wei Ho***, Tsu-Jui Fu, Chun-Yi Lee

*2018*

- ECCV is a top conference in computer vision
- * indicates equal contribution

## Awards and Honors

2018 **2nd Place**, ECCV 2018 Workshop and Challenge: Person In Context (PIC) *Munich, DE*

2017 **3rd Prize**, Final Project Competition of NTHU The Cutting Edge of Deep Learning *Hsinchu, TW*

## Skills

### Programming Languages, Frameworks, Tools and Languages

Programming Languages, Frameworks, Tools and Languages

- **Programming Languages:** C, C++, Python, Java, shell scripting, JavaScript
- **Frameworks and Tools:** Git, Flask, OpenGL, Android Studio, LaTex, CSS, HTML
- **Data Science and Machine Learning Frameworks:** NumPy, Pandas, Gensim, OpenCV, NLTK, Scikit-learn, Keras, TensorFlow, PyTorch
- **Toolkits:** Raspberry Pi, Google AIY Vision Kit, Intel Movidius NCS