Tzu-Sheng Kuo

Curriculum Vitae

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Education

2019 – 2021	**Stanford University**. Master of Science in Electrical Engineering, GPA: 4.0/4.0
2014 – 2019	**National Taiwan University (NTU)**. Bachelor of Science in Electrical Engineering, GPA: 4.26/4.30, **Summa Cum Laude (Top 1%)**

Research Experience

Human-Computer Interaction

2019 – Present	**Stanford HCI Group**, *Stanford, CA*. *Advisors: Prof. James Landay, Prof. Elizabeth Murnane* ○ Redesigned digital interfaces to support well-being by adopting nature elements into user interfaces ○ Resulted in 1 publication in submission to CHI 2021
2017 – 2019	**Interactive Graphics Lab**, *NTU, Taiwan*. *Advisors: Prof. Bing-Yu Robin Chen, Prof. Xing-Dong Yang* ○ Designed two pneumatic interfaces that emulate physical objects to provide haptic feedbacks in VR ○ Designed a software tool with an autocomplete feature to assist makers in building breadboard circuits ○ Resulted in 3 publications at UIST 2018, UIST 2019, and CHI 2019

Computer Vision & Machine Learning

2017 – 2019	**Vision and Learning Lab**, *NTU, Taiwan*. *Advisor: Prof. Yu-Chiang Frank Wang* ○ Modified DeepLabv3+ and proposed a loss function for semantic segmentation on satellite imagery ○ Resulted in 1 publication at DeepGlobe Workshop in CVPR 2018

Image Processing

2016 – 2019	**Multimedia Processing and Communications Lab**, *NTU, Taiwan*. *Advisor: Prof. Homer H. Chen* ○ Approximated the temporal variation of gaze fixation to estimate the depth based on eye vergence ○ Resulted in 1 publication at ICIP 2018

Peer-Reviewed Publications

CHI 2021 (under review)	**Tzu-Sheng Kuo**. Kelsey Wang, Sarah L. Billington, James A. Landay, and Elizabeth L. Murnane. 2021. Biophilic Technology: Exploring the Application of Biophilic Principles to the Design of Digital Interfaces. In Submission to *Proceedings of the 2021 CHI Conference on Human Factors in Computing Systems* (CHI '21). ACM, New York, NY, USA. [under review]
UIST 2019 ⚲	Shan-Yuan Teng, Cheng-Lung Lin, Chi-huan Chiang, **Tzu-Sheng Kuo**, Liwei Chan, Da-Yuan Huang, and Bing-Yu Chen. 2019. TilePoP: Tile-type Pop-up Prop for Virtual Reality. In *Proceedings of the 32nd Annual ACM Symposium on User Interface Software and Technology* (UIST '19). ACM, New York, NY, USA, 639–649. **Best Paper Honorable Mention** [PDF]
CHI 2019 ⚲	Jo-Yu Lo, Da-Yuan Huang, **Tzu-Sheng Kuo**, Chen-Kuo Sun, Jun Gong, Teddy Seyed, Xing-Dong Yang, and Bing-Yu Chen. 2019. AutoFritz: Autocomplete for Prototyping Virtual Breadboard Circuits. In *Proceedings of the 2019 CHI Conference on Human Factors in Computing Systems* (CHI '19). ACM, New York, NY, USA, Paper 403, 1–13. **Best Paper Honorable Mention** [PDF]
UIST 2018	Shan-Yuan Teng, **Tzu-Sheng Kuo**, Chi Wang, Chi-huan Chiang, Da-Yuan Huang, Liwei Chan, and Bing-Yu Chen. 2018. PuPoP: Pop-up Prop on Palm for Virtual Reality. In *Proceedings of the 31st Annual ACM Symposium on User Interface Software and Technology* (UIST '18). ACM, New York, NY, USA, 5–17. [PDF]
CVPRW 2018	**Tzu-Sheng Kuo***, Keng-Sen Tseng*, Jia-Wei Yan*, Yen-Cheng Liu, and Yu-Chiang Frank Wang. 2018. Deep Aggregation Net for Land Cover Classification. In *IEEE/CVF Conference on Computer Vision and Pattern Recognition Workshops* (CVPRW '18). Salt Lake City, UT, pp. 252–256. *The authors contributed equally. [PDF]
ICIP 2018	**Tzu-Sheng Kuo**, Kuang-Tsu Shih, Sheng-Lung Chung, and Homer H. Chen. 2018. Depth from Gaze. In *25th IEEE International Conference on Image Processing* (ICIP '18). Athens, pp. 2910–2914. [PDF]

Posters and Demos

UIST 2020   **Tzu-Sheng Kuo** and Eric Rawn. 2020. Let It Rip! Using Velcro for Acoustic Labeling. In *The Adjunct Publication of the 33rd Annual ACM Symposium on User Interface Software and Technology* (UIST '20). [to appear]

HCOMP 2020   **Tzu-Sheng Kuo**, McArdle Hankin, Miranda Li, Andrew Ying, and Cathy Wang. 2020. Assessing Political Bias using Crowdsourced Pairwise Comparisons. In *Proceeding of the 8th AAAI Conference on Human Computation and Crowdsourcing* (HCOMP '20). [to appear]

Honors and Awards

2020   **Stanford Graduate Student Research Assistantships**

2018   **Phi Tau Phi Scholastic Honor Society Honorary Membership** – Graduated top 1% in NTU EECS Department

2014 – 2018   **Dean's List Award (5 times)** – Top 5% GPA in each semester

2018   **Appier Scholarship (2 times)** – Travel grant for ICIP 2018 and UIST 2018

2018   **Chien Shih-Liang Memorial Scholarship** – Given to 2 students in NTU EECS Department each year

2017   **Taiwan Ministry of Science and Technology Research Grant**

2017   **Irving T. Ho Memorial Scholarship** – Given to 1 senior student in NTU EE Department each year

Teaching Experience

2018   Teaching Assistant, Computer Vision: from Recognition to Geometry – *Instructor: Prof. Yu-Chiang Frank Wang*

2018   Teaching Assistant, Deep Learning for Computer Vision – *Instructor: Prof. Yu-Chiang Frank Wang*

2017   Teaching Assistant, Machine Learning – *Instructor: Prof. Hung-Yi Lee*

2017   Teaching Assistant, Signals and Systems – *Instructor: Prof. Lin-Shan Lee*

2016   Teaching Assistant, Electronics I – *Instructor: Prof. Liang-Hung Lu*

Work Experience

2019   **Mandatory Military Service**, *Taiwan.*

2017   **Software Engineering Intern**, *Cadence Design Systems, Inc., San Jose, CA.*
Managers: Mr. Danny Ho, Mr. Kei-Yong Khoo
- Gate-Level and RTL circuit design automation of Cadence Conformal Logic Equivalence Checking (LEC) Tool
- My code was checked-in for production and I received a return offer

Leadership Experience

2020 – present   **Community Associate, Stanford University**
I work with the Graduate Life Office and other community associates on promoting wellness and a sense of community in graduate residence with 1000+ students by coordinating social events and responding to emergency.

2016 – 2018   **Founder, Makerspace of NTUEE** 🔗
Motivated by the need for rapid prototyping tools outside restricted research labs of individual faculty, my team and I founded this makerspace and organized workshops to assist students in doing their side projects. In the midst of COVID-19, students in this makerspace develop a system that is deployed in the university to automatically detect and track people's forehead temperature at the entry of each building.

2017   **Chair, MakeNTU Makeathon** 🔗
Inspired by the global maker movement and the democratization of technology, my team and I launched the first nationwide makeathon in Taiwan with 200 participants and 70K USD in the arrangement. I led 60 student volunteers and cooperated with Taipei City Government and 22 international companies, including Google, Microsoft, Intel, etc.

2016 – 2017   **Director, Academic Department of NTUEE Student Association** 🔗
I led a team of 30 students to organize various academic affairs, including speeches, awards, NTU festival, NTUEE+ Project, etc., for over 800 students in the EE department.

Technical Skills and Languages

Technical Skills   Python, C++/C#, Matlab, Tensorflow, PyTorch, React, Javascript, CSS, HTML, Unity, OpenCV, Verilog, etc.

Languages   English (fluent), Mandarin (native), Taiwanese (native)