

# TZU-SHENG (JASON) KUO

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## EDUCATION

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<b>National Taiwan University (NTU)</b>	Taipei, Taiwan
Bachelor of Science in <b>Electrical Engineering</b> , 4 <sup>th</sup> year	09/2014-now
<b>Rank: Top 1% ( 3<sup>rd</sup>/266 )</b>	
Major GPA: 4.27/4.30; Overall GPA: 4.26/4.30	

## RESEARCH EXPERIENCE

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<b>Undergraduate Researcher, Multimedia Processing and Communications Lab</b>	07/2016-now
<i>Advisor: Prof. Homer H. Chen (IEEE Fellow), Dr. Dafei Shih (Dept. NTU EE)</i>	
<ul style="list-style-type: none"><li>- Research in <b>Augmented Reality</b>, <b>Eye Tracking</b>, and <b>Signal Processing</b></li><li>- Estimate human gaze depth to enable 3D interactions using eye trackers</li><li>- <b>One paper accepted</b> by IEEE International Conference on Image Processing (<b>ICIP 2018</b>)</li></ul>	
<b>Undergraduate Researcher, Vision and Learning Lab</b>	09/2017-now
<i>Advisor: Prof. Yu-Chiang Frank Wang (Dept. NTU EE)</i>	
<ul style="list-style-type: none"><li>- Research in <b>Computer Vision</b> and <b>Deep Learning</b></li><li>- Design a deep neural network to classify each pixel in a satellite image into a particular land cover category</li><li>- <b>One paper accepted</b> by IEEE Conference on Computer Vision and Pattern Recognition Workshop (<b>CVPR 2018</b>)</li></ul>	
<b>Undergraduate Researcher, Interactive Graphics / Computer Graphics Lab</b>	09/2017-now
<i>Advisor: Prof. Bing-Yu Robin Chen (Dept. NTU CSIE)</i>	
<ul style="list-style-type: none"><li>- Research in <b>Human Computer Interaction</b>, especially focusing on <b>Novel Interface Design</b> and <b>AR/VR</b></li><li>- Design a pneumatic shape-changing interface as on-palm props for virtual reality</li><li>- <b>One paper accepted</b> by ACM Symposium on User Interface Software and Technology (<b>UIST 2018</b>)</li><li>- <b>Another paper</b> related to circuit design and prototyping is currently under review (<b>CHI 2019</b>)</li></ul>	
<b>Research Assistant, Superconductor Lab, Institute of Physics, Academia Sinica</b>	05/2012-2014
<i>Advisor: Prof. Maw-Kuen Wu (Nobel Prize Nominee), Dr. Chung Chieh Chang (Academia Sinica)</i>	
<ul style="list-style-type: none"><li>- Research on Fabrication of Iron Selenide (FeSe) Superconducting Nanosheets</li></ul>	

## PUBLICATIONS

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- [3] Shan-Yuan Teng, **Tzu-Sheng Kuo**, Chi Wang, Chi-Huan Chiang, Da-Yuan Huang, Liwei Chan, Bing-Yu Chen, "PuPoP: Pop-up Prop on Palm for Virtual Reality," *ACM Symposium on User Interface Software and Technology (UIST)*, 2018.
  - [2] **Tzu-Sheng Kuo**, Keng-Sen Tseng, Jia-Wei Yan, Yen-Cheng Liu, and Yu-Chiang Frank Wang, "Deep Aggregation Net for Land Cover Classification," *IEEE Conference on Computer Vision and Pattern Recognition Workshop (CVPR)*, 2018.
  - [1] **Tzu-Sheng Kuo**, Kuang-Tsu Shih, Sheng-Lung Chung, and Homer H. Chen, "Depth from Gaze," *IEEE International Conference on Image Processing (ICIP)*, 2018.

## WORKING EXPERIENCE

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<b>Software Engineering Intern, Cadence Design System, Inc. @ San Jose, CA, USA</b>	07-09/2017
<i>Manager: Mr. Danny Ho, Mr. Kei-Yong Khoo</i>	
<ul style="list-style-type: none"><li>- Verification and Development of Cadence Conformal Logic Equivalence Checking (LEC) Tool</li><li>- Focus on <b>Gate Level</b> and <b>RTL Level</b> circuit design automation</li><li>- Receive <b>Full-Time Return Offer</b></li></ul>	
<b>Teaching Assistant, <u>Deep Learning for Computer Vision</u> - Instructor: Prof. Yu-Chiang Frank Wang</b>	02/2018-now
<b>Teaching Assistant, <u>Machine Learning</u> - Instructor: Prof. Hung-Yi Lee</b>	09/2017-01/2018
<b>Teaching Assistant, <u>Signal and System</u> - Instructor: Prof. Lin-Shan Lee</b>	02/2017-06/2017
<b>Teaching Assistant, <u>Electronics I</u> - Instructor: Prof. Liang-Hung Lu</b>	09/2016-01/2017

## SKILLS AND LANGUAGES

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Programming Languages/Tools: C++/C#, Python, Matlab, Javascript, CSS, html, Verilog, SPICE, Tensorflow, PyTorch, React, Unity  
Languages: English (fluent), Mandarin Chinese (native), Taiwanese (native), Japanese (basic)

## SELECTED HONORS AND AWARDS

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<b>Appier Scholarship</b>	08/2018
<b>Honorary Member, Phi Tau Phi Scholastic Honor Society</b>	06/2018
- Achieved academic excellence upon graduation ( <b>top 1%</b> in NTU EECS College) and officially nominated by NTU	
<b>Dean's List Award, 4 Times</b> - Each semester, students with <b>top 5% GPA score</b> receive Dean's List Award	09/2014-now
<b>Chien Shih-Liang Memorial Scholarship</b>	05/2018
<b>Taiwan Ministry of Science and Technology Research Project Grant</b>	07/2017-02/2018
<b>Irving T. Ho Memorial Scholarship</b>	10/2017
<b>Best Technology Award</b> , HackNTU - the largest hackathon in Taiwan held by NTU	08/2016
<b>World Champion</b> , Pagamo Calculus World Cup - a worldwide e-sport that competed in Calculus	02/2016

## SELECTED TERM PROJECTS

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<b>iTeach</b> - an ios mobile application for education implemented in ReactNative and Redux	02-06/2018
<b>Action Recognition</b> - design a neural network to recognize and localize actions in first-person videos	06/2018
<b>Animal Escape</b> - a project investigating user experience at zoo	12/2017
<b>Berkeley Pacman AI</b> - design a Pacman AI using machining learning and reinforcement learning	09-12/2017
<b>Music Mixer</b> - a digital circuit implemented by FPGA	06/2017
<b>Image Stitching</b> - generate a panorama from multiple images	05/2017
<b>High Dynamic Range Imaging</b> - generate an HDR image from multiple images	04/2017
<b>Video to Caption</b> - design a deep neural network to generate captions from videos automatically	04/2017
<b>Gourmet</b> - an online cuisine sharing website implemented using React	01/2017
<b>Arithmetic Logic Unit</b> - implemented in Gate Level using Verilog	12/2016
<b>Single Cycle MIPS Processor</b> - implemented in RTL Level using Verilog	12/2016
<b>NP3: Non-exact Projective NPNP Boolean Matching (2016 CAD Contest)</b>	06/2016
<b>Functionally Reduced And-Inverter Graph (FRAIG)</b> - circuit optimization using SAT engine	12/2015

## LEADERSHIP AND TEAMWORK EXPERIENCE

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<b>Founder, MakerSpace of NTUEE</b>	08/2016-now
- Support students to realize their crazy and creative ideas by providing hardware and industrial resources	
<b>Director, Academic Department</b> of NTUEE Student Association	06/2016-06/2017
- Organize academic affairs including speeches, awards, NTU festival, NTUEE+ Project, etc, for over <b>800</b> students	
- Lead a team with <b>30</b> members and cooperate with industrial companies	
<b>Chair, 2017 MakeNTU Makerthon</b>	08/2016-02/2017
- <b>1st hardware hackathon</b> in Taiwan for makers involving <b>200</b> participants and <b>70k USD</b> in arrangement	
- Cooperate with Taipei City Government and companies such as Google, Microsoft, Intel, ARM, etc	
- website: <a href="https://www.facebook.com/makentu.ntuee/">https://www.facebook.com/makentu.ntuee/</a>	

## SELECTED COURSES

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<b>Software:</b>	Deep Learning for Computer Vision, Machine Learning and Having It Deep and Structured, Machine Learning, Introduction to Artificial Intelligence and Machine Learning, Networking and Multimedia, Digital Visual Effects, Web Programming, Digital Speech Processing, Data Structure and Algorithm, Operating System
<b>Hardware:</b>	Computer Architecture, IC Design, Digital Circuit Design Lab, Switching Circuit and Logic Design, Circuits, Signals and Systems, Electronics, Electromagnetic, Introduction to Wireless and Mobile Networking
<b>HCI:</b>	Human Computer Interaction, Psychology, Design Thinking Workshop, Creative Thinking, Biology, Clinical Observation and Demand Exploration
<b>Mathematics:</b>	Calculus, Linear Algebra, Probability and Statistics, Differential Equation, Discrete Math, Complex Analysis

## MISCELLANEOUS

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<b>Nike+ Runner</b> - logged 100+ kilometers of running and counting	07/2017-now
<b>External Reviewer</b> - review conference papers for ICIP 2018, ICASSP 2018, and ACCV 2018	12/2017-03/2018
<b>Art Exhibition</b> - present watercolor and sketch paintings at an art gallery	12/2017
<b>Volunteer</b> - assist junior high students in schoolwork every weekend at Taiwan Fund for Children and Families	09/2015-02/2016
<b>Orientation Leader</b> - NTUEE freshman camp	08-09/2015
<b>Team Leader</b> - NTUEE summer camp for high school students	06-07/2015
<b>Dancer</b> - NTU Popular Dance Club	09/2014-09/2015
<b>Basketball Player</b> - NTUEE Men Basketball Team	09/2014-06/2015
<b>Participant</b> - ATONA Case Competition (ATCC), Team Tumblr	05/2015-06/2015
<b>Volunteer</b> - assist victims of typhoon in Rinari Tribe to rehabilitate their homes	07/2012