

# Zekun Tong

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## EDUCATION

<b>National University of Singapore, School of Engineering</b> <i>PhD in Industrial Systems Engineering   Supervisor: Professor <a href="#">Andrew Lim</a></i>	Kent Ridge, Singapore <i>Aug. 2018 – Present</i>
<b>Xidian University, School of Computer Science and Technology</b> <i>B.E. in Computer Science and Technology   Studied in Excellence Engineer Class</i>	Xi'an, Shaanxi, China <i>Sept. 2014 – Jun. 2018</i>

## EXPERIENCE

<b>Undergraduate Research Assistant</b> <i>National University of Singapore</i> <ul style="list-style-type: none"><li>Developed an indoor navigation system based on machine learning and multi-sensor detection.</li><li>Implemented Android app to collect multi-sensor data fingerprint and machine learning back-end for matching and tracking.</li></ul>	Jan. 2018 – Jun. 2018 <i>Kent Ridge, Singapore</i>
<b>Research Intern</b> <i>Sungkyunkwan University</i> <ul style="list-style-type: none"><li>Learned in the DATES lab to combine numerical methods with wafer/chip testing.</li><li>Developed a Virtual Probe algo using Matlab to find min cost and analyse silicon characterization of Nanoscale IC.</li></ul>	Jan. 2017 – Mar. 2017 <i>Suwon, Korea</i>

## PUBLICATIONS

<b>Generalizable Person Re-identification with Relevance-aware Mixture of Experts</b>   <i>CVPR 2021, poster, acceptance rate: 22.2%</i> <ul style="list-style-type: none"><li>Yongxing Dai, Xiaotong Li, Jun Liu, <b>Zekun Tong</b>, Ling-yu Duan</li></ul>	Mar. 2021
<b>Digraph Inception Convolutional Networks</b>   <i>NeurIPS 2020, poster, acceptance rate: 20.1%</i> <ul style="list-style-type: none"><li><b>Zekun Tong</b>, Yuxuan Liang, Changsheng Sun, Xinke Li, David S. Rosenblum, Andrew Lim</li></ul>	Sept. 2020
<b>Campus3D: A Photogrammetry Point Cloud Benchmark for Hierarchical Understanding of Outdoor Scene</b>   <i>ACM MM 2020, oral, acceptance rate: 8.9%</i> <ul style="list-style-type: none"><li>Xinke Li, Chongshou Li, <b>Zekun Tong</b>, Andrew Lim, Junsong Yuan, Yuwei Wu, Jing Tang, Raymond Huang</li></ul>	Aug. 2020
<b>Fine-Grained Urban Flow Inference</b>   <i>IEEE TKDE</i> <ul style="list-style-type: none"><li>Kun Ouyang, Yuxuan Liang, Ye Liu, <b>Zekun Tong</b>, Sijie Ruan, Yu Zheng, David S. Rosenblum</li></ul>	Jul. 2020

## PROJECTS

<b>Campus3D</b>   <i>A large-scale 3D point cloud dataset of NUS campus</i> <ul style="list-style-type: none"><li>Collaborated to annotate point cloud data and propose an effective framework for Hierarchical Learning.</li><li>Implemented DGCNN with proposed framework using PyTorch to obtain fine-grained hierarchical labels.</li><li>Developed project website, including dataset downloads, visualization, benchmark, etc. The homepage is <a href="#">here</a>.</li></ul>	Jan. 2019 – May. 2020
<b>IPPT Trainer</b>   <i>An application for recording fitness tests using body posture recognition</i> <ul style="list-style-type: none"><li>Co-developed with Singapore Ministry of Defence to monitor fitness training automatically. See demo at <a href="#">here</a>.</li><li>Collaborated to design real-time push- &amp; sit-ups counting algo using keypoints detection based on OpenPose.</li><li>Implemented low-latency image streaming module using WebRTC to reduce the computing load on edge phones.</li></ul>	Jul. 2018 – Dec. 2018

## PATENTS

<b>An Anti-motion Sickness Seat and a balancing method</b>   <i>China Invention Grant (ZL201510300557.1)</i>	Sept. 2017
<b>An Image Stabilization and Service Software for Ships</b>   <i>China Software Copyright (2016SR047532)</i>	May. 2016
<b>An Anti-motion Sickness Seat</b>   <i>China Utility Model (ZL201520377894.6)</i>	Oct. 2015
<b>An Inflatable Adjustable Protective Cover</b>   <i>China Utility Model (ZL201220750284.2)</i>	Jul. 2013
<b>An Earbud that Pauses and Plays Music Automatically</b>   <i>China Utility Model (ZL201220750298.4)</i>	Jul. 2013

## AWARDS

Finalist Winner of Interdisciplinary Contest in Modeling (MCM/ICM)   <i>winning rate: 0.3%</i>	Mar. 2016
Third Prize in "Challenge Cup" National Science and Technology Innovation Contest	Nov. 2015
First Prize in Microsoft Imagine Cup (Shaanxi)	May. 2017

## HONORS

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Research Scholarship at NUS	2018 - 2022
Graduate Star of Xidian University (10 out of 5357 graduates)	Jun. 2018
Huawei Scholarship (two times)	2017, 2018
National Scholarship	Oct. 2017
National Scholarship for Encouragement	Oct. 2016
China Aerospace Science and Technology Corporation (CASC) Scholarship	Apr. 2016

## PROFESSIONAL ACTIVITIES

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Reviewer of International Conference on Machine Learning (ICML 2021)	Feb. 2021
Reviewer of Conference on Computer Vision and Pattern Recognition (CVPR 2021)	Dec. 2020

## PROGRAMMING SKILLS

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**Languages:** Python, C/C++, Matlab, Java, SQL, L<sup>A</sup>T<sub>E</sub>X, JavaScript, HTML/CSS and others.  
**Frameworks:** PyTorch, Keras, TensorFlow, React, Node.js and others.