

# Zhengzhong Tu

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## Education

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**M.Eng. of Microelectronics, Fudan University, Shanghai, China**

2016.9 - Expected 2018.7

GPA: 3.497/4.0

**B.S. of Microelectronics, Fudan University, Shanghai, China**

2012.9 - 2016.7

GPA: 3.09/4.0 (2<sup>nd</sup> year 3.314, 3<sup>th</sup> year 3.036, 4<sup>th</sup> year **3.484**) Major GPA: 3.272/4.0 Graduate Thesis: A

## Standard tests

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- **GRE General: 329** Verbal: 159 (83%) Quantitative: 170 (97%) Analytical Writing: 3.5 (42%)
- **TOEFL iBT: 101** Reading: 28 Listening: 23 Speaking: 22 Writing: 28

## Publications

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Conferences:

- **Zhengzhong Tu**, Tongyu Zong, Xueliang Xi, Li Ai, Yize Jin, Xiaoyang Zeng and Yibo Fan, "Content Adaptive Tiling Method Based on User Access Preference for Streaming Panoramic Video", 2018 The International Conference on Consumer Electronics (ICCE), Las Vegas, USA, Jan 12-14, 2018, accepted  
**Link: [http://soc.fudan.edu.cn/vip/attachments/download/6007/paper\\_icce\\_usletter.pdf](http://soc.fudan.edu.cn/vip/attachments/download/6007/paper_icce_usletter.pdf)**
- Tongyu Zong, **Zhengzhong Tu**, Li Ai, Xueliang Xi, Yize Jin, Xiaoyang Zeng and Yibo Fan, "Panoramic Video Delivery Based on Laplace Compensation and Sphere-Markov Probability Model", 2018 The International Conference on Consumer Electronics (ICCE), Las Vegas, USA, Jan 12-14, 2018, accepted

## Research and Project Experience

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**Software study and hardware implementation of video stitch**

2015.9-2016.6

(undergraduate research assistant)

- Software implementation of video stitch
- RTL hardware implementation of video stitch, adopting a 3-stage pipeline workflow
- Realized a low-cost, flexible, real-time video stitching of 2000x480 @30fps
- Got the highest grade (A) on the graduation thesis based on the above project

**Panoramic real-time video-broadcasting system**

2016.9-2017.4

(Team leader and main contributor, graduate research assistant)

- Mainly developed C-model of a panoramic real-time video-broadcasting system with 2/4/6 fisheye cameras capturing videos, OpenCV3.0 processing and OpenGL rendering final spherical panoramic videos
- Used multi-thread programming and pipeline processing to parallel processing multiple cameras
- Used look-up tables to calibrate the fisheye cameras and conceived a bayer-based projecting method as a substitute for bilinear interpolation in order to improve the processing speed

**Virtual reality content streaming**

2017.5-2017.10

(Main contributor, graduate research assistant)

- Proposed a new tile partition method based on equi-rectangular panorama streaming system with a paper accepted by ICCE 2018 (First Author)
- Proposed a new panoramic video delivery scheme based on motion predictive and probability model with a paper accepted by ICCE 2018 (Second Author)

**Mega-pixel camera and image stitching**

2017.8-now

(Team leader, graduate research assistant)

- Leader of National Natural Science Foundation of China
- Exploiting an open-source project Facebook Surround 360

## Social Activities

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- Guanxing Volunteer Activity** 2013.9-2013.11
- Helping the students suffering from autism or other mental diseases to communicate and play games
- Vice Minister of Art Department @ Student Union of School of Information Sci. and Tech** 2013.9-2014.9
- Organized April Fool's Party for our department, participating two shows in the party, for one show I played ukulele and for another show I played the piano
  - Organized Le Huo Zhang Jiang activity
  - Leading performer in school evening parties for 3 times (guitarist in a band; pianist cooperated with a female violinist; ukulele guitarist in the party opening)
- Captain of Fudan Zero team participating in Fudan Electronic-Game Tournament** 2014.10-2014.12
- Led our class team Fudan Zero to the fourth place in Fudan Electronic-Game Tournament
- Internship @ PhotonIC technologies** 2016.7-2016.8
- Learned some background knowledge about deep learning
  - Did some researches about super-resolution image retrieval methods

## Skills and Interests

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- **Computer Skills:** Extensive programming experiences in C/C++, Linux, MATLAB; Familiar with digital image processing and video streaming and encoding; Basic knowledge of data structures and algorithms; Basic knowledge of computer vision and machine learning
- **IC Design Skills:** Solid Verilog HDL background knowledge and programming experiences; Familiar with ASIC Design Flows and usage of various EDA tools; Familiar with computer architectures and communication principles
- **Language Skills:** English; Chinese(native)
- **Interests:** Piano, guitar, ukulele, badminton, ping-pong, basketball, travel

## Honors and Awards

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- Fudan Excellent Student Scholarship, 2016.6
- Fudan Boxue Scholarship (Top 3), 2017.10
- Star of May honor of the Art Department at Student Union of School of Information Sci. and Tech. 2014.6
- Grade Examination of Musical Level 10 for nonprofessionals in the Playing of Piano, 2006

## Advanced Courses

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Curriculum	Credits	Grade
Fundamentals of Digital Logic	4	A
Digital Integrated Circuit Design	3	A
Graduation Thesis (Video Stitch)	6	A
Analog and Digital Circuit Experiments II	3	A-
VLSI System Design (Graduated Course)	3	A
Computer Vision (Graduated Course)	3	A-

## References

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- Dr. Yibo Fan, Associate Professor of State Key Lab of ASIC & System, Fudan University
- Dr. Xiaoyang Zeng, Professor of State Key Lab of ASIC & System, Fudan University.
- Dr. Yanqiu Chen, Professor of School of Computer Science, Fudan University