

## ZHANG LIU

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### Education

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Anglo-Chinese Junior College, Singapore	2016-2017
Swiss Cottage Secondary School, Singapore	2014-2015
No. 13 Middle School, Urumqi, Xinjiang, China	2010-2013

### Leadership

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- **President**, Mathematics and Computing Club, Anglo-Chinese Junior College (2016-2017)
- **Vice-President (Talent Development)**, Science and Mathematics Council (SMC), Anglo-Chinese Junior College (2016-2017)
- **Overall In-Charge (IC)**, Open House CCA Showcase, CCA Exhibition & CCA Recruitment (2017)
- **Event IC**, Vietnam Educational Program – SOS Village (2016)
- **Assistant Event IC**, Heyday (2016)
- **Assistant Event IC** and **Computer Science Question Setter**, International C. B. Paul Quiz (2017)
- **Committee Chairman**, International Biomedical Quiz (2016 & 2017), International C. B. Paul Quiz (2016 & 2017), International Young Whizzes Challenge (2016)
- **Prefect**, Student Council Training and Development Committee, Swiss Cottage Secondary School (2014-2015)
- **Organizer**, Swiss Cottage Secondary School Secondary One Orientation (2014)
- **Organizer**, Student Council Recruitment (2014)
- **Team Leader**, RoboCup (2015), SMU Youth Innovation Challenge (2015), National Junior Robotics Competition (2014)

### Research Experience

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- 1. Research Intern (Full-time)** **January 2018 – Present**
  - Lab of Medical Mechatronics, School of Engineering, National University of Singapore (NUS)  
(Webpage: <http://bioeng.nus.edu.sg/mm/>)
  - Supervisor: Assistant Professor Ren Hongliang (<http://www.bioeng.nus.edu.sg/people/PI/REN/>)
  - Research topic: Deep Learning, Emotion Recognition, brain-computer interface (BCI)
- 2. Research Student** **April 2016 – April 2017**
  - College of Engineering (Mechanical Aerospace Engineering), Nanyang Technological University, Singapore
  - Supervisor: Associate Professor Ng, Yin Kwee, Eddie  
(<http://www.mae.ntu.edu.sg/aboutus/FacultyandStaff/Faculty/Pages/mykng.aspx>)
  - Research topic: Machine Learning and Sentiment Analysis

### 3. Research Student

February 2017 - April 2017

- Yale-NUS College, Singapore
- Mentor: Assistant Professor Jean Liu  
(<https://www.yale-nus.edu.sg/about/faculty/jean-liu/>)
- Research topic: the neuroscience and psychology of love

### 4. Research Intern

June 9th - 20<sup>th</sup>, 2014

- Centre for Research and Applied Learning in Science, Science Centre Singapore Research topic:  
build an automated lighting system with Arduino and sensors

## Projects and Publications

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1. **"Emotion Recognition from Electroencephalography (EEG) Signals Using Deep Learning to assist recovery of children with speech deficiencies"** (tentative problem statement) (ongoing)
2. **"When Siri Knows How You Feel: Application of Machine Learning in Automatic Sentiment Recognition in Human Speech"**
  - Presented in International Researchers' Club Conference on Science Engineering and Technology (2017) and won the Best Paper Award
  - Paper accepted and will be presented at the SAI Future of Information and Communications Conference (IEEE technically sponsored) (2018)
  - Presented at Nanyang Research Program (2016/17)
  - Presented at Singapore Science and Engineering Fair (2017)
3. **Effects of Broad-Spectrum Antibiotics on The Clinical Outcomes of Pneumonia** (2017)
  - Presented at Beijing Youth Science Creation Competition (2017)
4. **Multi-Perspective Research on Autism Spectrum Disorder** (2017)
  - Presented at the Science and Technology Endowment Program (STEP) - National University of Singapore (NUS) Sunburst Brain Camp (2017)
5. **Neuroscience of Love**
  - Published in the *Brain Book*, Chapter 6 (2017)
6. **CRADLE Automatic LED Lighting System** (2014)

## Honors and Awards

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- **Best Paper Award**, International Researchers' Club Conference on Science, Engineering and Technology (2017)
- **Gold**, Nanyang Research Program (2016/17)
- **Silver**, Beijing Youth Science Creation Competition (2017): **Represented Singapore** at international event
- **Bronze**, Singapore Science and Engineering Fair (2017) (highest award for Robotics)
- **Bronze**, Singapore National Olympiad in Informatics (2017 & 2016 & 2015)
- **Silver**, Singapore Mathematics Olympiad (Senior) (2014)
- **Honourable Mention**, Singapore Mathematics Olympiad (Open) (2016)

- **Distinction**, Australian Mathematics Competition (2016)
- **Distinction**, Computational and Algorithmic Thinking (CAT) (2016)
- **Top 20 Runners**, Anglo-Chinese Junior College Intra-School Cross Country (2016)
- **Represented the school** in National Inter-School Cross Country Championship (2015)
- **1<sup>st</sup> Runner-up**, Swiss Cottage Intra-School Cross Country 'B' Division Girls' Championship (2015 & 2014)
- **High Distinction**, International Competitions and Assessments for Schools (ICAS) in Mathematics (2014)
- **Distinction**, International Competitions and Assessments for Schools (ICAS) in Science (2014)
- **Academic Book Prize for Top in Standards** (2014)
- **Academic Book Prize for Top in Additional Mathematics** (2014)
- **Top Student**, 2nd Preliminary Examinations (2013)

## Membership

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- **Member**, International Researchers' Club (IRC) Singapore (2017-)
- **Member**, ManiAC student journalist group, Anglo-Chinese Junior College (2016-2017)
- **Member**, Science and Technology Club, Swiss Cottage Secondary School (2014-2015)

## Participation

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- **Participant**, Science and Technology Endowment Program (STEP) - National University of Singapore (NUS) Sunburst Brain Camp (2017)
- **Participant**, National University of Singapore (NUS) International Olympiad in Informatics (IOI) Workshop (2014)
- **Participant**, Automatic Speech Recognition and Understanding Workshop (ASRU) (2017)

## Areas of Expertise and Interest

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1. **Programming languages:** Proficient: C/C++, Python; Beginner in JavaScript
2. **Software / tools:** Proficient: Statistical Package in Social Sciences (SPSS), Praat, Orange Canvas, Arduino, RoboLab, Mindstorm, MATLAB
3. **Language skills:** Written and Verbal: English and Mandarin Chinese
4. **Research interests:** Computer Science, Natural Language Processing, Sentiment Analysis, Artificial Intelligence, Machine Learning, Affective Computing, Cognitive Science, Neuroscience, Computational Linguistics, Psycholinguistics, Sociolinguistics, Chemical Linguistics
5. **Personal interests:** language games and puzzles, long distance running, hiking, sci-fi movies and novels, poetry and literature, psychological thrillers, detective novels, meta-physics theories, Xiao (Chinese Flute)