

# Li Liu

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## EDUCATION

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### University of California, Santa Cruz

*Ph.D. student in Computer Science and Engineering*

CA, USA

*Sept. 2022 – Present*

### Zhejiang University

*Master student of Control Science and Engineering*

Hangzhou, China

*Sept. 2019 – Mar. 2022*

### Zhejiang University

*Bachelor of Landscape Gardening, Chu Kochen Honors College*

Hangzhou, China

*Sept. 2015 – Jun. 2019*

## RESEARCH INTERESTS

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Machine Learning, Computer Vision, Data Mining, Reliable AI models For Healthcare

## RESEARCH AND PROJECTS

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### CPSC: A reliable and efficient classification framework

Mar. 2021 – Jan. 2022

- Developed a novel conformal predictor: conformal prediction with shrunken centroids (CPSC).
- More efficient than other compared conformal predictors when dealing with noised and high-dimensional data.

### Data augmentation strategies anti training data inadequacy

Jun. 2020 – Jan. 2021

- Improved the e-nose system's robustness with data augmentation strategies which overcome dataset inadequacy.
- Developed a novel augmentation strategy based on conformal prediction, which outperformed the other strategies.

### Lotus Pavilion - an interactive architecture design

Jan. 2019 – Jun. 2019

- Designed a light-responsive pavilion and implemented a demo of its unit with Arduino.
- Video record of the light-response unit demo.
- Won 5+ international art/design competition awards.

## PUBLICATIONS

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- [1] **L. Liu** et al."CPSC: Conformal prediction with shrunken centroids for efficient prediction reliability quantification and data augmentation, a case in alternative herbal medicine classification with electronic nose". *IEEE Transactions on Instrumentation and Measurement*. (2022)
- [2] H. Wang, X. Zhan, **L. Liu** et al."Unsupervised cross-user adaptation in taste sensation recognition based on surface electromyography with conformal prediction and domain regularized component analysis". *IEEE Transactions on Instrumentation and Measurement*. (equal contribution) (2022)
- [3] Z.Li, **L.Liu** et al."Bag of Tricks for FGSM Adversarial Training".arxiv (2021)
- [4] **L. Liu** et al. "Boost AI Power: Data Augmentation Strategies with unlabelled Data and Conformal Prediction, a Case in Alternative Herbal Medicine Discrimination with Electronic Nose". *IEEE Sensors Journal*. (2021)
- [5] **L. Liu** et al."Classifying herbal medicine origins by temporal and spectral data mining of electronic nose ".arxiv (2021)
- [6] H. Wang, D. Lu, **L. Liu** et al."Quantitatively Recognizing Stimuli Intensity of Primary Taste Based on Surface Electromyography". *Sensors*. (2021)

## SKILLS

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**Programming languages:** Python, C, C#,Java, Matlab, Jupyter, PyTorch

**Visual Design:** Drawing, Photoshop, Adobe Illustrator, InDesign, Auto-CAD, Rhino, Sketchup, Vary

**Video and Animation:** After Effect, Premier, Vegas, Blender

**Language:** Mandarin, English(TOEFL 111)

## ACHIEVEMENTS & HONORS

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Outstanding Graduate Award of Zhejiang Province, China	2022
China National Scholarship for graduate students (Overall 2% graduate students awarded);	2021
Alibaba Geek Scholarship;	2020
Bronze Medal in the Hong Kong Contemporary Art Competition;	2020
Dean Scholarship of Chu Kochen Honors College (10/1800 undergraduates awarded);	2019
Silver award of China College Students' "Internet+" Innovation and Entrepreneurship Competition (Top 0.01%);	2019
Ten Preeminent Students of College of Agriculture and Biotechnology, Zhejiang university(Top 1%);	2018
China National Scholarship (Overall 2% undergraduate students awarded);	2016

## INTERNSHIP EXPERIENCE

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<b>Rotunbot Co., Lt.</b>	Hangzhou, China
<i>User Interface Design Intern</i>	<i>Sept. 2019 – Sept.2021</i>
Main responsibilities: Interactive design, product advertising. User interface design and implementation.	

## EXTRA-CURRICULAR EXPERIENCE

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<b>Intercultural communications</b>	2018,2021
<ul style="list-style-type: none"><li>• Seminar speaker in Stanford Summer Research Program, 2021, online</li><li>• Student representative of China in Asian Undergraduate Summit, 2019, China and Singapore</li><li>• Student participant of 53rd Annual Conference of the National Collegiate Honors Council, 2018, Boston, USA</li><li>• Exchange program in University of California Davis, 2018, Davis, USA</li><li>• Representative of student visitor to National University of Singapore, 2018, Singapore</li></ul>	