

# JIESHAN CHEN

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## RESEARCH INTEREST

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My work lies in the fields of software engineering, deep learning, and human computer interaction. By understanding the semantics of user interfaces, my work aims to improve designers', developers', and end-users' efficiency when designing, developing and using the mobile applications. I am currently working on android code generation from User Interface (UI) design, UI design search and generation, and mobile application accessibility enhancement.

## EDUCATION

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**Australian National University**

*August 2018 – (Expected) February 2022*

**PhD Student**, Research School of Computer Science

Advisors: Zhenchang Xing (primary advisor), Chunyang Chen, David Lo and Miaomiao Liu

**Sun Yat-Sen University**

*August 2014 – June 2018*

**Bachelor**, Statistics, School of Mathematics

**Honors Graduate**

Overall GPA: 3.8/4.0

## PUBLICATIONS

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### **Towards Complete Icon Labeling in Mobile Applications**

*2022 ACM Conference on Human Factors in Computing Systems (CHI '22).*

To appear. Acceptance Rate 12.5% (324/2,597)

[Jieshan Chen](#), Amanda Swearngin, Jason Wu, Titus Barik, Jeffrey Nichols and Xiaoyi Zhang.

### **Object Detection for Graphical User Interface: Old Fashioned or Deep Learning or a Combination?**

*Proceedings of the 28<sup>th</sup> ACM Joint European Software Engineering Conference and Symposium on the Foundations of Software Engineering (ESEC/FSE '20).*

[PDF](#) · [Tool](#) · [Video](#) · [GitHub](#) · Acceptance Rate 28% (101/360) · Cited By 23

[Jieshan Chen](#), Mulong Xie, Zhenchang Xing, Chunyang Chen, Xiwei Xu, Liming Zhu and Guoqiang Li.

### **Wireframe-based UI Design Search through Image Autoencoder.**

*ACM Trans. Softw. Eng. Methodol.* 29, 3, Article 19 (June 2020). Present in ICSE 2021.

[PDF](#) · [Video](#) · [GitHub](#) · Cited By 17

[Jieshan Chen](#), Chunyang Chen, Zhenchang Xing, Xin Xia, Liming Zhu, John Grundy, and Jinshui Wang.

### **Unblind Your Apps: Predicting Natural-Language Labels for Mobile GUI Components by Deep Learning. (ACM SIGSOFT Distinguished Paper Award)**

*Proceedings of the 42<sup>nd</sup> International Conference on Software Engineering (ICSE '20).*

[PDF](#) · [Video](#) · [GitHub](#) · Acceptance Rate 20.9% (129/617) · Cited By 35

[Jieshan Chen](#), Chunyang Chen, Zhenchang Xing, Xiwei Xu, Liming Zhu, Guoqiang Li, and Jinshui Wang.

### **Ensemble Application of Convolutional and Recurrent Neural Networks for Multi-label Text Categorization.**

*Proceedings of 2017 international joint conference on neural networks (IJCNN '17).*

[PDF](#) · Cited By 175

Guibin Chen, Deheng Ye, Zhenchang Xing, [Jieshan Chen](#), and Erik Cambria.

## RESEARCH EXPERIENCE

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### Apple Inc.

March 2021–September 2021

Machine Learning + UI Understanding - AI/ML Research Intern

- Prototyped a system using different strategies for enhancing 100% icon accessibility for screen readers (accepted to CHI2022 – to appear)
- Prototyped a system to extract interactions from usage recordings to assist developers and end-users (submitted a paper to IUI2022 – under review)

### Guangzhou, Haolan Information Technology Co., Ltd

November 2017 – March 2018

Artificial Intelligence Research Intern

Project Topic: Chinese Medicine's Image Recognition Project based on Deep Learning

- Collaborated in a six-person team of software development engineers, algorithm engineers to develop an Android application for instantly identifying the Chinese traditional herbal medicine.
- Implemented Image Enhancement Technology to augment the sparse raw data (150 pictures, 14 classes), developed image classification model achieving 95% accuracy in testing data; received great feedback from the client.

### Guangdong Province Key Laboratory of Computational Science

July 2016 – November 2016

Data Mining Team – Researcher

Project Topic: Efficient Movie Recommendation System for Large-Scale Dataset

- Implemented Matrix Factorization Model in C & Python for training the large-scale rating matrix from Netflix.
- Utilized MPI to parallelize the training process, up to 25 times faster than the original one.
- Optimized the model by an online learning framework, Alternating Direction Method of Multipliers (ADMM), to quickly adapt the model to new records.

## HONORS & AWARDS

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ACM SIGSOFT Distinguished Paper Award in ICSE 2020	July 2020
ANU HDR Fee Remission Merit Scholarship	2018-2022
ANU PhD Scholarship (International) Full-Time	2018-2021
Honors Graduate of Sun Yat-Sen University	June 2018
Second Class Scholarship of Sun Yat-sen University (Top 10%)	2017
Meritorious Winners in Interdisciplinary Contest in Modeling	January 2017
The Most Commercial Potential Award in Intel Cup Parallel Application Challenge	October 2016
Second Prize in China Undergraduate Mathematical Contest in Modeling	September 2016
Third Class Scholarship of Sun Yat-sen University (Top 15%)	2016
Second Class Scholarship of Sun Yat-sen University (Top 10%)	2015

## SKILLS

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**Language:** Chinese (native), English (fluent)

**Computer Languages:** Python, JavaScript, C/C++, Android, SQL, HTML

**Keywords:** UI Understanding, Computer Vision, Software Engineering, Machine Learning, Deep Learning,