JIESHAN CHEN

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RESEARCH INTEREST

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

Australian National University   *August 2018 – (Expected)February 2022*
Ph.D. Student, Research School of Computer Science
Advisors: Zhenchang Xing and Chunyang Chen

Sun Yat-Sen University   *August 2014 – June 2018*
Bachelor, Statistics, School of Mathematics   **Honors Graduate**
Overall GPA: 3.8/4.0

PUBLICATIONS

Towards Complete Icon Labeling in Mobile Applications
Jieshan Chen, Amanda Swearngin, Jason Wu, Titus Barik, Jeffrey Nichols and Xiaoyi Zhang.
2022 ACM Conference on Human Factors in Computing Systems (CHI '22).
To appear. Acceptance Rate 12.5% (324/2,597)

Object Detection for Graphical User Interface: Old Fashioned or Deep Learning or a Combination?
Jieshan Chen, Mulong Xie, Zhenchang Xing, Chunyang Chen, Xiwei Xu, Liming Zhu and Guoqiang Li.
Proceedings of the 28th ACM Joint European Software Engineering Conference and Symposium on the Foundations of Software Engineering (ESEC/FSE '20).
PDF · Tool · Video · Code · Acceptance Rate 28% (101/360) · Cited By 23

Wireframe-based UI Design Search through Image Autoencoder.
Jieshan Chen, Chunyang Chen, Zhenchang Xing, Xin Xia, Liming Zhu, John Grundy, and Jinshui Wang.
ACM Trans. Softw. Eng. Methodol. 29, 3, Article 19 (June 2020). Present in ICSE 2021.
PDF · Video · Code· Cited By 17

Unblind Your Apps: Predicting Natural-Language Labels for Mobile GUI Components by Deep Learning.
(ACM SIGSOFT Distinguished Paper Award)
Jieshan Chen, Chunyang Chen, Zhenchang Xing, Xiwei Xu, Liming Zhu, Guoqiang Li, and Jinshui Wang.
Proceedings of the 42nd International Conference on Software Engineering (ICSE '20).
PDF · Video · Code · Acceptance Rate 20.9% (129/617) · Cited By 35

Ensemble Application of Convolutional and Recurrent Neural Networks for Multi-label Text Categorization.
Guibin Chen, Deheng Ye, Zhenchang Xing, Jieshan Chen, and Erik Cambria.
Proceedings of 2017 international joint conference on neural networks (IJCNN '17).
PDF· Cited By 175

RESEARCH EXPERIENCE

CSIRO's Data61   *January 2022– Present*

Research Scientist – Software Engineering for AI (SE4AI)

Apple Inc.   *March 2021– September 2021*

AI/ML Research Intern - Machine Learning + UI Understanding Team

- Prototyped a system using different strategies for enhancing 100% icon accessibility for screen readers (accepted at CHI'22 – to appear)
- Prototyped a system to extract interactions from usage recordings to assist developers and end-users (submitted a paper to IUI'22 – 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

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

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,