# Jintai Chen

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| GOOGLE SCHOLAR: | https://scholar.google.com/citations?user=ZiY3xYEAAAAJ |
| HOMEPAGE: | https://whatashot.github.io/ |

## EDUCATION

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| 2018 - PRESENT | **Zhejiang University** | Hangzhou, China |
| | College of Computer Science and Technology | |
| | Ph.D in Computer Science and Technology, with honor | |
| | Excellent Doctoral Graduates of Zhejiang Province, China | |
| | Advisor: Professor Jian Wu | |
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| 2014 - 2018 | **Zhongnan University of Economics and Law** | Wuhan, China |
| | School of Statistics and Mathematics | |
| | B.S. in Applied Statistics, with honor | |

## RESEARCH SUMMARY

I received the Ph.D. degree in the College of Computer Science and Technology of Zhejiang University, fortunately supervised by Professor Jian Wu (Chang Jiang Scholar) and working closely with IEEE Fellow, Professor Danny Ziyi Chen. My main research interests are in the areas of deep learning algorithm design, AI for healthcare, machine learning, computer vision, and tabular data analysis. I am also interested in interpretable neural network design, such as capsule neural networks and additive neural networks. I have published over 30 papers on top-tier AI conferences as well as top-tier AI-for-Healthcare conferences and journals.

## PUBLICATIONS (BY TOPICS)

†= co-first authors, * = corresponding author(s)

### ECG Signal Analysis

1. **Electrocardio panorama: Synthesizing new ECG views with self-supervision**
   (Got scores 7, 9, 10 out of a total of 10 in peer-review)
   **Jintai Chen**†, Xiangshang Zheng†, Hongyun Yu†, Danny Z. Chen, Jian Wu*
   The Thirtieth International Joint Conference on Artificial Intelligence (IJCAI-2021)

2. **ME-GAN: Learning panoptic electrocardio representations for multi-view ECG synthesis conditioned on heart diseases**
   **Jintai Chen**†, Kuanlun Liao†, Kun Wei, Haochao Ying, Danny Z. Chen, Jian Wu* The Thirty-ninth International Conference on Machine Learning (ICML-2022)

3. **Identifying Electrocardiogram abnormalities using a handcrafted-rule-enhanced neural network**
   Yuexin Bian, **Jintai Chen**, Xiaojun Chen, Xiaoxian Yang, Danny Z. Chen, Jian Wu*
   IEEE/ACM Transactions on Computational Biology and Bioinformatics (T-CBB), January, 2022 (Q1)

4. **Superior detection of congenital heart diseases by pediatric electrocardiogram based deep learning integrated with human knowledge**
   **Jintai Chen**†, Shuai Huang†, Ying Zhang†, Dantong Li, Jia Qiu, Lianting Hu, Xiaoting Peng, Yunmei Du, Yunfei Gao, Danny Z. Chen, Abdelouahab Bellou, Jian Wu*, Huiying Liang*

## Tabular Learning and Medical Test Analysis

1. **DANETs: Deep Abstract Networks for tabular data classification and regression**
**Jintai Chen**, Kuanlun Liao, Yao Wan, Danny Z. Chen, Jian Wu*
Proceedings of the thirty-sixth AAAI Conference on Artificial Intelligence (AAAI-2022)

2. **T2G-Former: Organizing tabular features into relation graphs promotes heterogeneous feature interaction**
Jiahuan Yan†, **Jintai Chen**†, Yixuan Wu, Danny Z. Chen, Jian Wu*
Proceedings of the thirty-seventh AAAI Conference on Artificial Intelligence (AAAI-2023, <span style="color:red">oral representation</span>)

3. **TabCaps: A capsule neural network for tabular data classification with BoW routing**
**Jintai Chen**, Kuanlun Liao, Yanwen Fang, Danny Z. Chen, Jian Wu*
The International Conference on Learning Representations (ICLR-2023)

4. **ExcelFormer: A neural network surpassing GBDTs on tabular data**
**Jintai Chen**†, Jiahuan Yan†, Danny Z. Chen, Jian Wu*
Preprint

5. **ChroNet: A multi-task learning based approach for prediction of multiple chronic diseases**
Ruiwei Feng, Yan Cao, Xuechen Liu, Tingting Chen, **Jintai Chen**, Danny Z Chen, Honghao Gao, Jian Wu*
Multimedia Tools and Applications, January, 2021 (Q1)

6. **Robust training of graph neural networks via noise governance** Siyi Qian, Haochao Ying, Renjun Hu, Jingbo Zhou, **Jintai Chen**, Danny Z Chen, Jian Wu*
The Sixteenth ACM International Conference on Web Search and Data Mining, February, 2023

## Computer Vision and Medical Image Analysis

1. **A hierarchical graph network for 3D object detection on point clouds**
**Jintai Chen**†, Biwen Lei†, Qingyu Song†, Haochao Ying, Danny Z Chen, Jian Wu*
The Thirty-third IEEE Conference on Computer Vision and Pattern Recognition (CVPR-2020)

2. **A receptor skeleton for capsule neural networks**
**Jintai Chen**, Hongyun Yu, Chengde Qian, Danny Z. Chen, Jian Wu*
The Thirty-eighth International Conference on Machine Learning (ICML-2021)

3. **Doctor imitator: A graph-based bone age assessment framework using hand radiographs**
**Jintai Chen**†, Bohan Yu†, Biwen Lei†, Ruiwei Feng, Danny Z Chen, Jian Wu*
The Twenty-third International Conference on Medical Image Computing and Computer-Assisted Intervention (MICCAI-2020)

4. **Flow-Mixup: Classifying multi-labeled medical images with corrupted labels**
**Jintai Chen**, Hongyun Yu, Ruiwei Feng, Danny Z Chen, Jian Wu*
The fourteen IEEE International Conference on Bioinformatics and Biomedicine (BIBM-2020)

5. **LSRC: A long-short range context-fusing framework for automatic 3D vertebra localization**
**Jintai Chen**†, Yanjie Wang†, Ruoqian Guo†, Bohan Yu, Tingting Chen, Wenzhe Wang, Ruiwei Feng, Danny Z Chen, Jian Wu*

The Twenty-second International Conference on Medical Image Computing and Computer-Assisted Intervention (MICCAI-2019)

6. **A transfer learning based super-resolution microscopy for biopsy slice images: The joint methods perspective**
**Jintai Chen**, Haochao Ying, Xuechen Liu, Jingjing Gu, Ruiwei Feng, Tingting Chen, Honghao Gao, Jian Wu*
IEEE/ACM Transactions on Computational Biology and Bioinformatics (T-CBB), April, 2020 (Q1)

7. **Cross-Layer retrospective retrieving via layer attention**
Yanwen Fang, Yuxi Cai, **Jintai Chen**, Jingyu Zhao, Guangjian Tian, Guodong Li*
The International Conference on Learning Representations (ICLR-2023)

8. **Self-learning and one-shot learning based single-slice annotation for 3D medical image segmentation**
Yixuan Wu, Bo Zheng, **Jintai Chen**, Danny Z Chen, Jian Wu*
The Twenty-fifth International Conference on Medical Image Computing and Computer-Assisted Intervention (MICCAI-2022, <span style="color:red">oral representation</span>)

9. **A fully 3D cascaded framework for pancreas segmentation**
Wenzhe Wang, Qingyu Song, Ruiwei Feng, Tingting Chen, **Jintai Chen**, Danny Z Chen, Jian Wu*
IEEE 17th International Symposium on Biomedical Imaging (ISBI), April, 2020

10. **SSN: A stair-shape network for real-time polyp segmentation in colonoscopy images**
Ruiwei Feng, Biwen Lei, Wenzhe Wang, Tingting Chen, **Jintai Chen**, Danny Z Chen, Jian Wu*
IEEE 17th International Symposium on Biomedical Imaging (ISBI), April, 2020

11. **A deep learning approach for colonoscopy pathology WSI analysis: Accurate segmentation and classification**
Ruiwei Feng†, Xuechen Liu†, **Jintai Chen**, Danny Z Chen, Honghao Gao, Jian Wu*
IEEE Journal of Biomedical and Health Informatics (J-BHI), October, 2021 (Q1)

12. **Interactive few-shot learning: Limited supervision, better medical image segmentation**
Ruiwei Feng†, Xiangshang Zheng†, Tianxiang Gao†, **Jintai Chen**, Wenzhe Wang, Danny Z Chen, Jian Wu*
IEEE Transactions on Medical Imaging (T-MI), October, 2021 (Q1)

13. **A semi-supervised deep convolutional framework for signet ring cell detection**
Haochao Ying, Qingyu Song, **Jintai Chen**, Tingting Liang, Jingjing Gu, Fuzhen Zhuang, Danny Z Chen, Jian Wu*
Neurocomputing, September, 2021 (Q1)

14. **D-Former: A U-shaped dilated Transformer for 3D medical image segmentation**
Yixuan Wu, Kuanlun Liao, **Jintai Chen**, Jinhong Wang, Danny Z Chen, Honghao Gao, Jian Wu*
Neural Computing and Applications, October, 2022 (Q1)

15. **Nodule-plus R-CNN and deep self-paced active learning for 3D instance segmentation of pulmonary nodules**
Wenzhe Wang, Ruiwei Feng, **Jintai Chen**, Yifei Lu, Tingting Chen, Hongyun Yu, Danny Z Chen, Jian Wu*
IEEE Access, September, 2019 (Q1)

16. **Multi-view learning with feature level fusion for cervical dysplasia diagnosis**
Tingting Chen, Xinjun Ma, Xuechen Liu, Wenzhe Wang, Ruiwei Feng, **Jintai Chen**, Chunny

Yuan, Weiguo Lu, Danny Z Chen, Jian Wu*
Medical Image Computing and Computer Assisted Intervention, October, 2019

17. **Fetal brain tissue annotation and segmentation challenge results**
Kelly Payette, Hongwei Li, Priscille de Dumast, Roxane Licandro, Hui Ji, Md Mahfuzur Rahman Siddiquee, Daguang Xu, Andriy Myronenko, Hao Liu, Yuchen Pei, Lisheng Wang, Ying Peng, Juanying Xie, Huiquan Zhang, Guiming Dong, Hao Fu, Guotai Wang, Zun-Hyan Rieu, Donghyeon Kim, Hyun Gi Kim, Davood Karimi, Ali Gholipour, Helena R Torres, Bruno Oliveira, Joao L Vilaça, Yang Lin, Netanell Avisdris, Ori Ben-Zvi, Dafna Ben Bashat, Lucas Fidon, Michael Aertsen, Tom Vercauteren, Daniel Sobotka, Georg Langs, Mireia Alenya, Maria Inmaculada Villanueva, Oscar Camara, Bella Specktor Fadida, Leo Joskowicz, Liao Weibin, Lv Yi, Li Xuesong, Moona Mazher, Abdul Qayyum, Domenec Puig, Hamza Kebiri, Zelin Zhang, Xinyi Xu, Dan Wu, Kuanlun Liao, Yixuan Wu, **Jintai Chen**, Yunzhi Xu, Li Zhao, Lana Vasung, Bjoern Menze, Meritxell Bach Cuadra, Andras Jakab
Medical Image Analysis (MIA), April, 2023 (Q1)

18. **A corresponding region fusion framework for multi-modal cervical lesion detection**
Tingting Chen, Wenhao Zheng, Heping Hu, Chunhua Luo, **Jintai Chen**, Chunnv Yuan, Weiguo Lu, Danny Z Chen, Honghao Gao*, Jian Wu*
IEEE/ACM Transactions on Computational Biology and Bioinformatics (T-CBB), May, 2022 (Q1)

19. **GCL: Gradient-Guided Contrastive Learning for Medical Image Segmentation with Multi-Perspective Meta Labels**
Yixuan Wu, **Jintai Chen**\*, Jiahuan Yan, Yiheng Zhu, Danny Chen, Jian Wu*
ACM International Conference on Multimedia (ACMMM 2023)

20. **Ord2Seq: Regarding Ordinal Regression as Label Sequence Prediction**
Jinhong Wang†, Yi Cheng†, **Jintai Chen**\*, Tingting Chen, Danny Chen, Jian Wu*
IEEE/CVF International Conference on Computer Vision (ICCV 2023)

## AWARDS

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| 2023 | Excellent Doctoral Graduates of Zhejiang Province, China (Top 1%) |
| 2023 | Excellent Doctoral Graduates of Zhejiang University, China (Top 1%) |
| 2022 | Huawei Foundation Research Scholarship (Top 3%) |
| 2021 | National Scholarship of China (Top 1%) |
| 2021 | Tencent Scholarship (Top 1%) |
| 2020 | Outstanding Ph.D. Student Scholarship, Zhejiang University (Top 3%) |
| 2019 | Doctoral Freshman Scholarship, Zhejiang University (Top 3%) |
| 2016 | Chinese Bank Scholarship (Top 1%) |
| 2015 | National Scholarship of China (Top 1%) |
| 2015, 2016 | First Prize Scholarship, Zhongnan University of Economics and Law (Top 3%) |

## INTERNS & VISITING

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| Jun. - Sep., 2022 | **DAMO Academy, Alibaba**<br>Research Intern |
| Jun. - Sep., 2021 | **Medical Big Data Center, Guangdong Academy of Medical Sciences**<br>Visiting Scholar<br>Working closely with Professor Huiying Liang, Shuai Huang, and Dantong Li. |

## Talks

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| Nov., 2022 | How to conduct researches on AI for healthcare, Shanghai University |
| Oct., 2022 | ECG Signal Processing and Synthesis for Heart disease diagnosis, Carnegie Mellon University |
| Oct., 2022 | ECG Synthesis for New View and New Data, Shanghai AI Lab |
| Sept., 2022 | Part Hierarchy Learning, ByteDance AI Lab |
| Nov., 2022 | Tabular Data Processing, UberAI |
| Nov., 2022 | Domain Mixup for distant transfer learning, Shanghai Jiao Tong University |

## Professional Services

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| Conference Program Committee Members | ICML, AAAI, IJCAI, ICCV, NeurIPS, MICCAI, ISBI |
| Journal Article Reviewer | TNNLS, JBHI, TCBB, Frontiers in Public Health, JBSM, TCDS, Frontiers in Genetics |
| Monitoring | Offering / discussing ideas & polishing articles & reviewing codes for several doctoral freshmen and undergraduate students |

## Software Skills

Python, Pytorch, Tensorflow, R, Matlab