

# DIAN ZHANG (张滇)

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## EDUCATION

- 09/2006-07/2010 **PhD** in Computer Science & Engineering  
The Hong Kong University of Science and Technology (HKUST), Hong Kong  
**Supervisor: Lionel M. Ni**
- 09/2004-08/2006 **MPhil** in Computer Science & Engineering, HKUST, Hong Kong
- 09/1992-06/1996 **B.E.** in Computer Science (graduated at the age of 19)  
Wuhan University of Technology (WHUT), Wuhan, P.R. China

## ACADEMIC EXPERIENCE

- 01/2023-Now **Professor**, College of Computer Science & Software Engineering, Shenzhen University  
**-Honorary Professor**, Faculty of Dentistry, **Hong Kong University** (since 2024)  
**-Adjunct Associate Professor**, Thrust of Data Science and Analytics of the Information Hub,  
**Hong Kong University of Science and Technology (Guangzhou)** (since 2023)
- 09/2021-12/2022 Associate Professor, College of Computer Science & Software Engineering, Shenzhen University
- 08/2019-08/2021 Associate Professor, Department of Computing & Decision Sciences,  
Lingnan University, Hong Kong  
**Coordinator**, Master program of Artificial Intelligence & Business Analytics (**AIBA**)
- 01/2016-08/2019 Associate Professor, College of Computer Science & Software Engineering, Shenzhen University
- 08/2012-2015/12 Assistant Professor, College of Computer Science & Software Engineering, Shenzhen University
- 08/2011-07/2012 Research Assistant Professor, Fok Ying Tung Graduate School, HKUST
- 08/2010-07/2011 Postdoctoral Fellow, Fok Ying Tung Graduate School, HKUST

## RESEARCH INTERESTS

Smart Healthcare, Data Analytics, Internet of Things, Mobile Computing.

## SHORT BIOGRAPHY

I have long been engaged in the fields of mobile computing, smart healthcare and data analytics, having published approximately 60 papers in top international conferences and journals. The majority of these papers are **first-authored by myself or graduate students under my supervision**. The total amount of research funding (PI/CI) exceeds 10 Million Yuan. As one of the earliest researchers to **pioneer device-free localization** and behavior recognition technologies, I designed novel algorithms for device-free object positioning and behavioral sensing, establishing new research directions in this field. My work has been recognized with prestigious awards, including: 2019 Ministry of Education Natural Science Second Prize (教育部自然科学二等奖), 2022 Shenzhen Natural Science Award First Prize (深圳市自然科学一等奖), 2019 Pacific Insurance Company Academic Achievement Award. My work in smart dental (healthcare) received 2024 Chinese Stomatological Association Annual Conference First Prize (corresponding author)(中华口腔医学会年会一等壁报), and International Association for Dental Research Southeast Asian Division (IADR-SEA) Research award (国际牙科研究协会亚太区研究贡献奖). Due to the contribution in smart dental, I was appointed **Honorary Professor** by the **Faculty of Dentistry at the University of Hong Kong** (ranked **2<sup>nd</sup> globally in Dentistry** by QS World University Rankings). Moreover, I have extensive teaching experience and adept at working in multicultural environments. I previously worked at Lingnan University as an associate professor and was the coordinator of AIBA program, which is currently one of the most popular postgraduate programs. Additionally, I possess substantial industry experience. my research team has built startups (Intelligent Origin Company) in Guangdong-Hong Kong-Macao Youth Entrepreneur Hub, Nansha District, Guangzhou, which is recognized by Nansha as a high-end entrepreneurship start-up company.

## TEACHING EXPERIENCE

- Shenzhen University
  - Teaching Evaluation: average ranking of all the courses is 19.8%, highest ranking is 1% (outperform over 80% professors)**
  - Machine Learning (4 semesters, PhD course, teach in English)
  - Paper Writing (2 semesters, PhD course, teach in English)
  - Database Systems (14 semesters)
  - Operating System (10 semesters)
  - Linux programing (2 semesters)
  - Mainframe programing (2 semesters)
  - Foundation of computer science (1 semester)

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- Wireless Sensor Networks (2 semesters)
- Internet of Things (2 semesters)
- **Lingnan University**
  - BUS2206 - Information System Management (2 semesters)
  - 1<sup>st</sup> term of 2020-2021 (My CTLE: 5.38 /department average: 5.15/University average: 5.22)
  - 1<sup>st</sup> term of 2019-2020 (My CTLE: 5.56 /department average: 5.21/University average: 5.15)
  - Web programming for e-Business (open the course and design the curriculum, with a high CTLE)

## INDUSTRIAL EXPERIENCE

- 2022.08-now **Director, Founder** of Intelligent Origin Inc.- Technology Seeding Programme (TSP) High-Level Tech Startups, HKUST Fok Ying Tung Research Institute (FYTRI)  
- PerfectU: An AI-assisted Digital Dental Treatment Planning Software using computer vision/graphics techniques  
- Remote Patient Monitoring System: Providing AI-enabled teledentistry solutions for oral healthcare services.
- 01/2019-now **Chief Scientist**, China Pacific Insurance Company - Provide industrial solution for the driver risk detection and pricing model design - Received **research achievement award** in 2019 due to the contribution
- 01/2003-08/2004 **Manager**, Information Technology Department, Bank of China (BOC) Hong Kong (Holdings) Limited Responsible for software design and development management for oversea global banking products - Anti-money Laundering system for London Branch - Remittance system for Vietnam Branch
- 03/1998-01/2003 **Project Manager & System Analyst**, Information Technology Department, Vanda Group Responsible for software design and development management for banking products - Mortgage Loan system for Pin An Bank, Guangdong Development Bank - Loan system For Pin An Bank, Guangdong Development Bank - Internal Account System for Pin An Bank
- 07/1996-03/1998 **Software Engineer**, Information Technology Department, Industry and Commercial Bank of China

## GRANT

1. "Machine Learning Curriculum Development for AI Talent Cultivation" Shenzhen University Graduate *Golden Course* innovation Project (Gant No:66010410), ¥200,000, 2024-2026, **PI**.
2. "Research on Key Technologies of Remote Medical Interaction based on Wearable Devices" Stable Support Project of Shenzhen Science and Technology Foundation (Gant No:20231122145548001), ¥600,000, 2023-2025, **PI**.
3. "Deep Learning-Based Recommendation for Acupuncture Treatment", Shenzhen Futian District Health System Research Grant (Gant No:FTWS069), ¥60,000, 2024-2026, **CI**.
4. "Deep Learning and Multimodal Fusion for Electroacupuncture Therapy in Post-Chemotherapy Peripheral Neuropathy", Shenzhen Futian District Health System Research Grant (Gant No:FTWS055), ¥60,000, 2024-2026, **CI**.
5. "Multimodal Sensor Fusion for Cancer Pain Prediction: Integrating Machine Learning and Acupuncture Intervention Analysis" the Shenzhen Science and Technology Foundation (Gant No:JCYJ20220531091407016), ¥300,000, 2022-2025, **CI**.
6. "Research of the Next Generation Wireless Localization and Behavior Recognition based on Cross-Technology", the National Natural Science Foundation of China (NSFC Grant No:61872247), ¥580,000, 2019-2022, **PI**.
7. "Human Behavior Modeling and Prediction for Location-based Service in Smart City" Lingnan University Research Grant, \$80,000, 2020-2021, **PI**.
8. "Research on the Theoretical Model and Key Technologies of Mobile Payment Security", the National Natural Science Foundation of China (Grant No: 61672358), ¥630,000, 2017-2020, **CI**.
9. "Research on pilot extraction technique to improve the performance of next generation wireless networks", the National Natural Science Foundation of China (Grant No: 61502313), ¥210,000, 2016-2018, **CI**.
10. "Research and Implementation on Next Generation Security Monitoring System of Device-free Technology", Shenzhen Peacock Program (Grant No:827-000175), ¥2,700,000, 2015-2018, **PI**.
11. "Research on Wireless Network Localization Techniques Based on Physical Layer Information", the National Natural Science Foundation of China (Grant No: 61472259), ¥820,000, 2015-2018, **CI**.

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12. “Key Technology Research on High Performance Cloud Computing for Big Data”, NSFC-Guangdong Province Joint Fund (Grant No:U1301252), ¥2,700,000, 2014-2017, **CI**.
13. “Research on RF-based technologies to track transceiver-free objects”, the National Natural Science Foundation of China (Grant No:61202377), ¥260,000, 2013-2015, **PI**.
14. “Research on Relay Node Deployment Problem in Wireless Sensor Networks”, the National Natural Science Foundation of China (Grant No:61272445), ¥260,000, 2013-2016, **CI**.
15. “Transceiver-free objects tracking in heterogeneous wireless networks”, Guangdong Natural Science Foundation (Grant No: S2012040006682), 2012-2014, ¥30,000, **PI**.
16. “Intruder detection and localization in wireless networks”, the Shenzhen Science and Technology Foundation (Grant No: JCYJ20120613173453717), ¥100,000, 2012-2014, **PI**.
17. “Research on Key Technologies of IoT-Oriented Service Middleware”, the National Natural Science Foundation of China (Grant No: 61170077), ¥600,000, 2012-2016, **CI**.
18. “Research on coverage model to localize intruder objects”, Research Fund by Shenzhen University (Grant No: 201210), ¥60,000, 2012-2013, **PI**.

## PATENTS

- “One time imaging method of indoor objects by using RF technology”, Peng Ji, **Dian Zhang** (P. R. China Patent No: ZL 2018 1 0204470.8, published date:2021.11) .
- “Device-free object sensing and localization method based on sparse networks”, Wenzhan Zhu, Weiling Zheng, **Dian Zhang** (P. R. China Patent No: ZL 2018 1 0059223.3, published date:2021.11).
- “Risk behavior prediction method for drivers to drive vehicles”, Sijun Ling, Bin He, **Dian Zhang**, Siyuan Liu, Hao Liu, Dawei Han, Lionel M. Ni (P. R. China Patent No: ZL 2018 1 1496492.2, published date: 2021.03.23)
- “Using multi-channels and SVM to track multiple transceiver-free objects in wireless networks”, P. R. China, Inventors: **Dian Zhang**, Yanyan Yang and Lionel M. Ni (P. R. China Patent No: ZL 2009 1 0192132.8, published date: 2012.12.19)
- “Multi-Scale Convolutional-Based Dental Orthodontic Analysis Method and Device”, Inventors: **Dian Zhang**, Landu Jiang. Patent application No: 2024113707419, 2024-09-29.
- “Contrastive Learning-Driven Multi-View Dental Crown Restoration Algorithm”, Inventors: **Dian Zhang**, Landu Jiang. Patent application No: 2025104009179, 2025-03-31.
- Automated Tooth Alignment effect with Smiling Face, Inventors: **Dian Zhang**, Landu Jiang. Patent application No: 202410154285.8, 2024-02-02.
- Temporomandibular Joint (TMJ) Motion Analysis Using Wireless Signals, Inventors: **Dian Zhang**. Patent application No: 2025100778285, 2025-01-16.
- 3D Dental Model Construction Method and System, Inventors: **Dian Zhang**. Patent application No: 202510443654.X, application Date: 2025-04-09.

## HONORS

- |         |   |
|---------|---|
| 12/2024 | <b>Research Award</b> , 38th Annual Scientific Meeting International Association for Dental Research (IADR) Southeast Asia Division (国际牙科研究协会是全球口腔医学与牙科研究领域最具影响力的非营利学术组织) |
| 09/2024 | <b>First class prize</b> , Annual Conference of Chinese Stomatological Association (中华口腔医学会) (国内口腔领域最高奖项之一, 获奖者可直接参与中国科协“青年人才托举工程”答辩, 无需经过遴选环节)                           |
| 10/2024 | Outstanding Contribution Award for Undergraduate Admission, Shenzhen University(本科招生突出贡献奖)  |
| 10/2023 | “名师进中学”, 优秀主讲人, Shenzhen University   |
| 10/2023 | Franklin V. Taylor Memorial Award, Best Paper Candidate, IEEE Systems, Man, and Cybernetics Society   |
| 12/2022 | <b>1<sup>st</sup> class prize, Shenzhen Natural Science Award</b> , 2022 (深圳市自然科学一等奖)   |
| 12/2022 | Best Practice Award, Best Original Innovation Award, The 5th National Smart Healthcare and Medical Innovation Competition   |
| 01/2019 | <b>2<sup>nd</sup> Class prize, Academic Research Outstanding Award in Nature Science from the Ministry of Education of China</b> (中国教育部自然科学二等奖) (第2完成人)                   |
| 09/2019 | Research Achievement Award, China Pacific Insurance Company, 2019   |
| 10/2016 | Best Supervisor, the Third National College Competition on Internet of Things   |
| 05/2016 | 1 <sup>st</sup> class prize, the Third National Competition on Internet of Things   |

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06/2015	Shenzhen Peacock Talent Award
10/2013	Excellent prize advisor, to instruct the student obtain the 3 <sup>rd</sup> class prize in IBM National Mainframe Technology Contest, 2013
10/2013	IBM Faculty Award

## ACTIVITIES

Committee member	of	ACM SIGBED China
Senior Member	of	China Computer Federation (CCF)
Program Chair, Publicity and Social Media Chair	of	6th International Conference on Edge Computing and IoT: Systems, Management and Security
Editorial Board member	of	Computer and Education: X Reality (Elsevier)
TPC Chair	of	1 <sup>st</sup> ACM Workshop on Mobile and Wireless Sensing for Smart Healthcare (in conjunction with ACM Mobicom 2022)
Publicity Chair	of	Edge Computing and IoT: Systems, Management and Security, 2021
Program Track Chair	of	IEEE International Conference of Parallel and Distributed Systems (ICPADS) 2018
Program Co-Chairs	of	The 1 <sup>st</sup> International Workshop on Wireless Sensing Technology (WST - ICPADS) 2017
Publicity Chairs	of	IEEE International Conference of Parallel and Distributed Systems (ICPADS) 2017
Publication Chairs	of	The 34th National Database Conference (NDBC 2016)
TPC member	of	SMARTCOMP 2017

## PUBLICATIONS

(Most papers are first-authored by graduate students I supervised or by myself)

### Selected Journal Articles:

- Jing Wen Li, Meng Jing Zhang, Ya Fang Zhou, John Adeoye, Jing Ya Jane Pu, Peter Thomson, Colman Patrick McGrath, **Dian Zhang\***, Li Wu Zheng, "Enhancing malignant transformation predictions in oral potentially malignant disorders: A novel machine learning framework using real-world data", in *iScience*, 28(3), 2025. (open access journal from **Cell Press**, **CELL**子刊)
- Xieling Chen, Haoran Xie, Xiaohui Tao, Fu Lee Wang, **Dian Zhang**, Hong-Ning Dai, "A computational analysis of aspect-based sentiment analysis research through bibliometric mapping and topic modeling", in *Journal of Big Data*, 12 (1), 40, 2025. (中科院二区, **JCR: Q1, IF: 7.9**)
- Liuyang Zhao, Landu Jiang, Yufeng Xie, JianHao Huang, Haoran Xie, Jun Tian, **Dian Zhang\***, "scDTL: enhancing single-cell RNA-seq imputation through deep transfer learning with bulk cell information", in *Briefings in Bioinformatics*, 2024, 25(6): 0-bbae555 (中科院一区, **JCR: Q1, IF: 7.9**)
- Weiling Zheng, Yu Zhang, Landu Jiang, Dian Zhang, Tao Gu, "MeshID: Few-Shot Finger Gesture Based User Identification Using Orthogonal Signal Interference", in *Sensors*, 24 (6), 1978, 2024.
- Cheng Luo, Rusheng Cai, Haizhou Guo, Siting Luo, Rui Mao, Landu Jiang, **Dian Zhang\***, MG-ASTN: Multi-Graph Framework with Attentive Spatial-Temporal Networks for Crowd Mobility Prediction, in *IEEE Internet of Things Journal (IOTJ)* 10 (21), 19054 - 19061, 2023. (**JCR: Q1, IF: 11.705**)
- Dian Zhang**, Zexiong Liao, Wen Xie, Xiaofeng Wu, Haoran Xie, Jiang Xiao, Landu Jiang, "Fine-grained and Real-time Gesture Recognition by Using IMU Sensors", *IEEE Transactions on Mobile Computing (IEEE TMC)*, 22(4): 2177-2189, 2023. (CCF A)
- Dian Zhang**, Wen Xie, Zexiong Liao, Wenzhan Zhu, Landu Jiang, Yongpan Zou, "Beyond RSS: A PRR and SNR Aided Localization System for Transceiver-free Target in Sparse Wireless Networks", *IEEE Transactions on Mobile Computing (IEEE TMC)*, 21(11): 3866 - 3879, 2022. (CCF A)
- Landu Jiang, Chen Luo, Zexiong Liao, Xuan Li, Q Chen, Y Jin, Kezhong Lu, **Dian Zhang**, "SmartRolling: A human-machine interface for wheelchair control using EEG and smart sensing techniques", in *Information Processing & Management*, 60 (3), 103262, 2023. (**JCR: Q1, IF: 8.6**)
- Xieling Chen, Haoran Xie, Zongxi Li, **Dian Zhang**, Gary Cheng, Fu Lee Wang, Hong-Ning Dai, Q Li, "Leveraging deep learning for automatic literature screening", in *Intelligent Bibliometrics, International*



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*Journal of Machine Learning and Cybernetics*, 14 (4), 1483-1525,2023.

- Yi-Jen Ho, Siyuan Liu, Jingchuan Pu, **Dian Zhang\***, "Is it all about you or your driving? Designing IoT-enabled risk assessments", in *Production and Operations Management (POMS)*, 31 (11), 4205-4222,2022.(UTD24,Top Journal in Production and Operations Management)
- Han Zhang, Zongxi Li, Haoran Xie, Raymond Y. K. Lau, Gary Cheng, Qing Li and **Dian Zhang\*** "Leveraging statistical information in fine-grained financial sentiment analysis ", in *World Wide Web(WWW)*, 25(513–531), 2022. (CCF A)
- Huichuwu Li, Jiang Xiao, Wei Wang, Lu Wang, **Dian Zhang**, Hai Jin, InFit: Combination Movement Recognition for Intensive Fitness Assistant via Wi-Fi, *IEEE Transactions on Mobile Computing (IEEE TMC)*, 22(12): 7188 - 7202,2022. ( CCF A)
- Haizhou Guo, **Dian Zhang\***, Siyuan Liu, Lei Wang, Ye Ding, "Bitcoin price forecasting: A perspective of underlying blockchain transactions", in *Decision Support Systems (DSS)* (0167-9236), 151: 1-14,2021.
- Haizhou Guo, **Dian Zhang\***, Landu Jiang, Kin-Wang Poon, Kezhong Lu, " ASTCN: An Attentive Spatial–Temporal Convolutional Network for Flow Prediction", in *IEEE Internet of Things Journal (IOTJ)* 9 (5), 3215-3225, 2021. (JCR:Q1, IF: 11.705)
- Landu Jiang, Wen Xie, **Dian Zhang\***, Tao Gu, " Smart diagnosis: Deep learning boosted driver inattention detection and abnormal driving prediction", in *IEEE Internet of Things Journal (IOTJ)* 9 (6), 4076-4089, 2021. (JCR:Q1, IF: 11.705)
- **Dian Zhang\***, Lujun Zhang and Haizhou Guo, "Cross-Technology Localization: Leveraging Commodity WiFi to Localize Non-WiFi Device ", in *KSII Transactions on Internet and Information Systems (TIIS)*, 15(11), 2021.
- Yongpan Zou, Dan Wang, Shicong Hong, Rukhsana Ruby, **Dian Zhang\***, Kaishun Wu, "A Low-Cost Smart Glove System for Real-time Fitness Coaching ", in *IEEE Internet of Things Journal (IoTJ)*, March, 2020. (JCR:Q1, IF: 11.705)
- Peng Xiang, Peng Ji, **Dian Zhang\***, "Enhance RSS-Based Indoor Localization Accuracy by Leveraging Environmental Physical Features ", in *Wireless Communications and Mobile Computing*, 2018 (1), 8956757, 2018.
- Yunhuai Liu, **Dian Zhang\***, Xiaonan Guo, Zhong Ming, Lei Yang and Lionel M. Ni, "RSS-based Ranging by Leveraging Frequency Diversity to Distinguish the Multiple Radio Paths", in *IEEE Transactions on Mobile Computing (IEEE TMC)*, April 1, 2017, 16(4): 1121-1135. (CCF A)
- Xuan Yang, **Dian Zhang\***, Bo Wang; Shuiyong Yao "A Fast Algorithm to Estimate Inverse Consistent Image Transformation Based on Corresponding Landmarks", in *Computerized Medical Imaging and Graphics*, 45:84-98, October, 2015. (JCR:Q2)
- Xiaonan Guo, **Dian Zhang\***, Kaishun Wu and Lionel M. Ni, "MODLoc: Localizing Multiple Objects in Dynamic Indoor Environment", in *IEEE Transactions on Parallel and Distributed System (IEEE TPDS)*, 25(11): 2969-2980, November, 2014. (CCF A)
- **Dian Zhang**, Kezhong Lu, Rui Mao, Yuhong Feng, Yunhuai Liu, Zhong Ming and Lionel M. Ni, " Fine-Grained Localization for Multiple Transceiver-free Objects by using RF-Based Technologies", in *IEEE Transactions on Parallel and Distributed System (IEEE TPDS)*, 25(6): 1464-1475, June, 2014. (CCF A)
- **Dian Zhang**, Yunhuai Liu, Xiaonan Guo and Lionel M. Ni, "RASS: A Real-time Accurate and Scalable System for Tracking Transceiver-free Objects", in *IEEE Transactions on Parallel and Distributed System (IEEE TPDS)*, 24(5): 996-1008, May, 2013. (Spotlight Paper, CCF A)
- Kezhong Lu, Xiaohua Xiang, **Dian Zhang**, Rui Mao, Gang Liu and Yuhong Feng, "Localization Algorithm Based on Maximum a Posterior in Wireless Sensor Networks," in *International Journal of Distributed Sensor Networks (IJDSN)*, 2012. (JCR:Q2)
- Lei Kang, Jin Zhang, Kaishun Wu, **Dian Zhang** and Lionel Ni, "RCSMA: Receiver-Based Carrier Sense Multiple Access in UHF RFID Systems ", in *IEEE Transactions on Parallel and Distributed Systems (IEEE TPDS)*, 23(4): 735-743, 2012. CCF A)
- Kezhong Lu, Xiaohua Xiang, **Dian Zhang**, Rui Mao, Yuhong Feng, "Localization algorithm based on maximum a posteriori in wireless sensor networks", in *International Journal of Distributed Sensor Networks(IJDSN)*, 8 (1), 260302, 2011.
- Lionel M. Ni, **Dian Zhang\*** and Michael R. Souryal, "RFID-based Localization and Tracking Technologies", in *the special issue of the IEEE Wireless Communications Magazine (IEEE WCM)*, 18(2), 45-51, 2011. (JCR:

Q1)

## Selected Conference Articles:

- Xunyu Yang, Qingxin Deng, Minghan Huang, Landu Jiang and **Dian Zhang\***, "MVDC : A Multi-view Dental Completion Model Based on Contrastive Learning, *2025 IEEE International Conference on Acoustics, Speech and Signal Processing(ICASSP)*, 2025.
- Jingwen Li, Mengjing Zhang, Yafang Zhou, **Dian Zhang\***, Liwu Zheng "Nomogram versus Machine Learning Algorithms: Predicting Malignant Transformation Risk in Oral Potentially Malignant Disorders", The 26th National Academic Conference of the Chinese Stomatological Association(中华口腔医学会全国口腔医学学术会议), 2024. (**Best Paper**)
- Qingxin Deng, Xunyu Yang, Minghan Huang, Landu Jiang, **Dian Zhang\***, "TAPoseNet: Teeth Alignment Based on Pose Estimation via Multi-scale Graph Convolutional Network, *International Conference on Medical Image Computing and Computer-Assisted Intervention(MICCAI)*, 314-323,2024. (Top international conference in medical image processing)
- KaKit Chio, Wenhao Zhu, Lihua He, **Dian Zhang**, Xu Yang, Wuman Luo, FGRL-Net: Fine-Grained Personalized Patient Representation Learning for Clinical Risk Prediction Based on EHRs, *2023 IEEE International Conference on Systems, Man, and Cybernetics (SMC)*, 3329-3336,2023.(**Best paper Candidate**)
- Weiling Zheng, Dian Zhang, Peng Ji, Tao Gu, RF-Eye: Training-Free Object Shape Detection Using Directional RF Antenna, in *International Conference on Mobile and Ubiquitous Systems: Computing, Networking, and Services(MobiQuitous)*,535-555, 2022.
- Zhihan Fang, Guang Yang, **Dian Zhang\***, Xiaoyang Xie, Guang Wang, Yu Yang, Fan Zhang, Desheng Zhang, "MoCha: Large-Scale Driving Pattern Characterization for Usage-based Insurance", *ACM SIGKDD Conference on Knowledge Discovery & Data Mining (ACM SIGKDD)* (9781450383325), 2849–2857,2021.08. (CCFA)
- Xibo Zhou, Qiong Luo, **Dian Zhang**, Lionel M Ni, "Detecting taxi speeding from sparse and low-sampled trajectory data, ", in *Web and Big Data: Second International Joint Conference,(APWeb-WAIM)* 2018.
- Wenzhan Zhu, Weiling Zheng and **Dian Zhang\***, "Beyond RSS: A PRR aided RSS System to Localize Transceiver-free Target in Sparse Wireless Networks", in *Proceedings of IEEE Global Communications Conference (IEEE GLOBECOM)*, December, 2018, Abu Dhabi, UAE.
- Bing He, **Dian Zhang\***, Siyuan Liu, Hao Liu, Dawei Han, and Lionel M. Ni, "Profiling Driver Behavior for Personalized Insurance Pricing and Maximal Profit", in *Proceedings of IEEE International Conference on BIG DATA (IEEE BIG DATA)*, December, 2018, Seattle, USA. (**Acceptance Ratio: 13%, 98/518**)
- Bing He, Xiaolin Chen, **Dian Zhang\***, Siyuan Liu, Dawei Han, and Lionel M. Ni, "PBE: Driver Behavior Assessment Beyond Trajectory Profiling", in *Proceedings of European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases (ECML PKDD)*, September, 2018, Dublin, Ireland.
- **Dian Zhang**, Xiaofeng Wu and Chen Wang, "Fine-grained and Real-time Gesture Recognition by Using IMU Sensors", in *Proceedings of IEEE International Conference on Parallel and Distributed Systems (IEEE ICPADS)*, pp. 747-754, December, 2017, Shenzhen, China.
- Weiling Zheng and **Dian Zhang\***, "HandButton: Gesture Recognition of Transceiver-free Object by Using Wireless Network", in *Proceedings of IEEE International Conference on Communications (IEEE ICC)*, June 8-12, 2015, London, UK.
- **Dian Zhang**, Xiaoyan Jiang and Lionel M. Ni, "Double Free: Measurement-free Localization for Transceiver-free Object", in *Proceedings of The 43th International Conference on Parallel Processing (IEEE ICPP)*, pages 529-538, September 9-12, 2014, Minneapolis, USA.
- Rui Mao, Sheng Liu, Honglong Xu, **Dian Zhang\*** and Daniel P. Miranker, "On Data Partitioning in Tree Structure Metric-Space Indexes", in *Proceedings of The 19th International Conference on Database Systems for Advanced Applications (DASFAA)*, pages 141-155, April 21-24, 2014, Bali, Indonesia.
- **Dian Zhang**, Yunhuai Liu, Xiaonan Guo and Lionel M. Ni, "On Distinguishing the Multiple Radio Paths in RSS-based Ranging", in *Proceedings of the 31th Annual IEEE International Conference on Computer Communications (IEEE INFOCOM)*, Orlando, Florida, USA, 2012. (CCF A, **Acceptance Ratio: 18%, 278/1547**)

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- Xiaonan Guo, **Dian Zhang\*** and Lionel M. Ni, "Localizing Multiple Objects in an RF-based Dynamic Environment", in *Proceedings of the 32th International Conference on Distributed Computing Systems (IEEE ICDCS)*, Macau, China, 2012. (**Acceptance Ratio: 13%, 71/515**)
- **Dian Zhang**, Yunhuai Liu and Lionel M. Ni, "RASS: A Real-time Accurate and Scalable System for Tracking Transceiver-free Objects", in *Proceedings of the 9th Annual IEEE International Conference on Pervasive Computing and Communications (IEEE PerCom)*, Seattle, USA, 2011. (**Acceptance Ratio: 17%, 26/156**)
- Min Gao, Xiaorui Pan, Longhui Deng, Caiyan Huang, **Dian Zhang**, Lionel Ni, "A versatile nodal energy consumption monitoring method for wireless sensor network testbed", in *IEEE 17th International Conference on Parallel and Distributed Systems (IEEE ICPADS)*, 2011.
- **Dian Zhang**, Yunhuai Liu and Lionel M. Ni, "Link-centric Probabilistic Coverage Model for Transceiver-free Object Detection in Wireless Networks", in *Proceedings of the 30th International Conference on Distributed Computing Systems (IEEE ICDCS)*, Genoa, Italy, 2010. (**Acceptance Ratio: 14%, 84/585**)
- **Dian Zhang**, Yanyan Yang, Dachao Cheng, Siyuan Liu, Lionel M Ni, "COCKTAIL: An RF-based hybrid approach for indoor localization, in *IEEE international conference on communications (IEEE ICC)*, 2010.
- **Dian Zhang**, and Lionel M. Ni, "Dynamic Clustering for Tracking Multiple Transceiver-free Objects", in *Proceedings of the 7th Annual IEEE International Conference on Pervasive Computing and Communications (IEEE PerCom)*, Galveston, Texas, USA, 2009. (**Acceptance Ratio: 13%, 26/199**)
- Quanbin Chen, Min Gao, Jian Ma, **Dian Zhang**, Lionel Ni, Yunhao Liu, MOCUS: moving object counting using ultrasonic sensor networks, in *International Journal of Sensor Networks (IJSN)*, 3 (1), 55-65, 2008.
- **Dian Zhang**, Jian Ma, Quanbin Chen, and Lionel M. Ni, "An RF-based System for Tracking Transceiver-free Objects", in *Proceedings of the 5th Annual IEEE International Conference on Pervasive Computing and Communications (IEEE PerCom)*, White Plains, New York, USA, 2007. (**Acceptance Ratio: 9.6%, 20/208**)
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- Liuyang Zhao, Jianhao Huang, **Dian Zhang\***, Yafang Zhou, Mengjing Zhang, Landu Jiang, Yufeng Xie, "MD-C: Multi-modal Dual-domain Consistency Model for Pain Assessment", submitted to *International Conference on Medical Image Computing and Computer-Assisted Intervention (MICCAI)* 2025, under review. (Top international conference in medical image processing)
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- Landu Jiang, Cheng Luo, Lu Wang and **Dian Zhang\***, The Convergence of AI and Music Therapy: Innovations in Mental Health Interventions, submitted to *IEEE Wireless Communications*. (**IF:10.9, JCR:Q1, 中科院1区**)



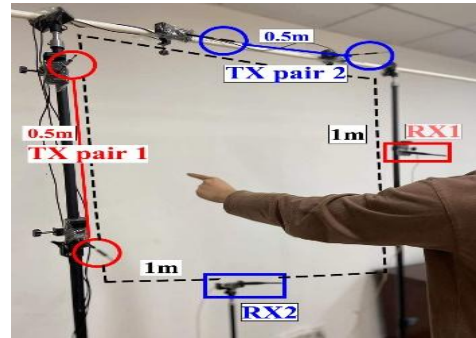
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## ONGOING WORK



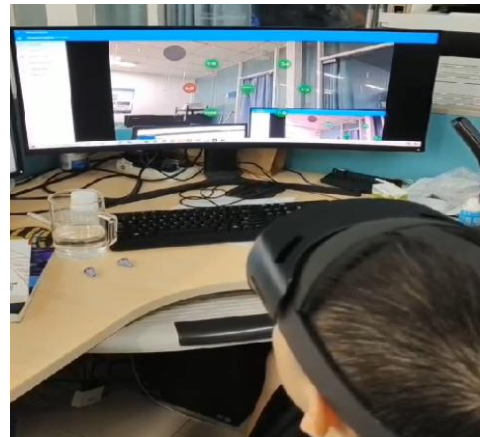
Contact-free 3D interactive technology based on the fusion of video and sound wave technology



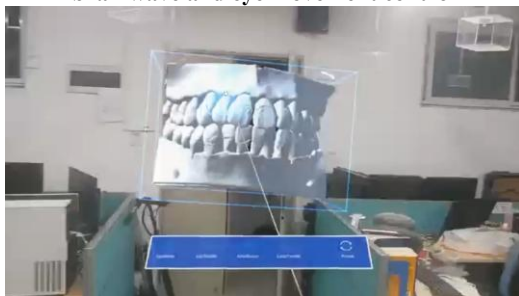
Hand writing recognition in the air by using orthogonal signal interference



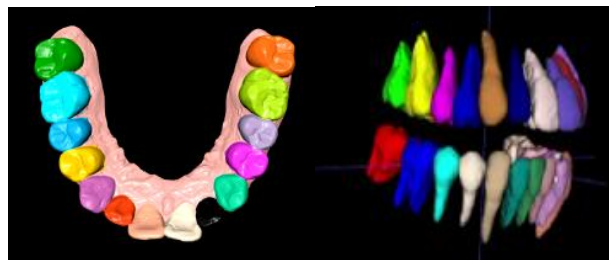
Intelligent wheelchair for the disabled based on brainwave and eye movement control



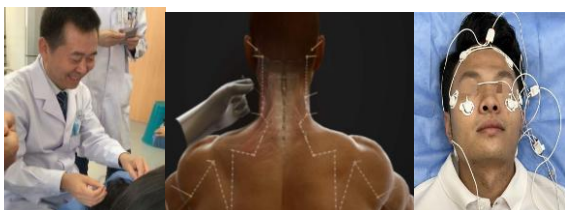
User identification and password protection through eye tracking



Training for dentists by using augmented reality



AI-assisted tooth segmentation, reconstruction and alignment



Acupuncture treatment plan and acupoints recommendation



AI-assisted facial type diagnosis and face prediction