

# Lei Chu | Ph.D.

## Personal Information

---

- **Address:** Room 516, EEB, 3740 McClintock Ave., Los Angeles, CA, 90089, USA.
- Contacts: **Phone:** +1 213 952 0155 (USA); **Email:** lc\_285@usc.edu; uestcahcl@gmail.com.

## Current Research Interests

---

I am an **interdisciplinary researcher**. My research interests include integrating information theory into neural network optimization and extending them into *Wireless Communications and Smart Sensing* applications.

- **Machine Learning:** Deep Mutual Information Estimation; Domain Adaptation; Convergence Analysis; Random Matrix Theory (RMT) based Neural Network Spectrum Analysis; Generalization Evaluation.
- **Massive MIMO:** RMT based Asymptotic Capacity Analysis; Precoding; Low Resolution ADCs/DACs; Intelligent Reflecting Surface; Joint Communication and Sensing; Semantic Localization.
- **Interdisciplinary Research:** Wearables/Radar/WiFi based Mixed Reality Activity Recognition/Reconstruction; Electroencephalogram (EEG)/ Point Cloud/ Millimeter-Wave Channel Measurements and Analysis;

## Employment History

---

- |                             |                                   |                        |
|-----------------------------|-----------------------------------|------------------------|
| ○ <b>Research Scholar</b>   | University of Southern California | Sep. 2021 - Present    |
| ○ <b>Research Associate</b> | Shanghai Jiao Tong University     | Mar. 2020 - Sep. 2021. |
| ○ <b>Research Assistant</b> | Shanghai Jiao Tong University     | Jul. 2015 - Feb. 2019. |
| ○ <b>System Engineer</b>    | Hefei No. 903 Research Institute  | Jul. 2011 - Jun. 2012. |

## EDUCATION

---

- **Ph.D.** Electrical Engineering, Shanghai Jiao Tong University Apr. 2016 - Dec. 2019  
Thesis: *Massive Streaming Data Analysis in MIMO Systems with Random Matrix Theory (in English)*.
- **Visiting Scholar** EECS, University of Tennessee, Knoxville Mar. 2019 - Sep. 2019  
Research Topic: *Understanding the Role of Unlabeled Data in Deep Learning with Information Theory*
- **M.Eng** Signal and Information Processing, UESTC Sep. 2012 - Jun. 2015  
Thesis: *Robust and Accurate Indoor Localization Using Low-rank Matrix Completion (In Chinese)*.
- **B.Eng.** Communication Engineering, Anhui Agricultural University Sep. 2007 - Jun. 2011  
Thesis: *Intelligent Vegetable Information Management Using Radio Frequency Identification (In Chinese)*

## PUBLICATIONS (Categorized by Research Topics)

**Quantity:** 60+ Inventions (35+ Journals; 15 Conference; 10+ Patents; 3 Book Chapters);

**Quality:** Google Scholar Citations: 900+ (Updated by 9-30-2022); **H Index:** 16; **i10-index:** 23; **ELEVEN** IEEE Transactions Papers; **FIVE** Papers with **IF>10**; **Several** Popular Articles (IEEE TBD 2016-2018, IEEE JCN 2021, IEEE Senors 2016-2017).

NOTES: "\*" AND "#" denoted the works done as the corresponding author and as the critical author (supervisor/me as the first/second author), respectively.

### Research Topic I: Advanced Signal Processing for Massive MIMO Systems.....

- J11 **L. Chu**, H. He, Robert C. Qiu. NOLD: A Neural-Network Optimized Low-Resolution Decoder for LDPC Codes [J]. in *IEEE Journal of Communications and Networks*, vol. 23, no. 3, pp. 159-170, 2021. **Popular Article**
- J10 **L. Chu**, Lily, L. Li, Robert C. Qiu, et al. Efficient Nonlinear Precoding for Massive MU-MIMO Downlink Systems with 1-Bit DACs [J]. in *IEEE Transactions on Wireless Communications*, vol. 18, no. 9, pp. 4213 - 4224, 2019.
- J9 **L. Chu**, F. Wen, Robert C. Qiu, et al. Eigen-Inference Precoding for Coarsely Quantized Massive MU-MIMO System with Imperfect CSI [J]. in *IEEE Transactions on Vehicular Technology*, vol. 68, no. 9, pp. 8729-8743, 2019.
- J8 **L. Chu**, et al. A Robust Vector Matching Localization Approach Based on Multiple Channels SSD Fingerprinting of Zigbee Networks [J]. in *Progress in Electromagnetics Research*, 2014, 144(1):133-140.
- J7 X.S. Guo, **L. Chu**<sup>#</sup>, Nirwan Ansari. Joint Localization of Multiple Sources from Incomplete Noisy Euclidean Distance Matrix in Wireless Networks [J]. in *Computer Communications*, vol. 122, pp.20-29, 2018.
- J6 X.S. Guo, **L. Chu**<sup>#</sup>, Sun X. Accurate Localization of Multiple Sources Using Semidefinite Programming Based on Incomplete Range Matrix [J]. *IEEE Sensors Journal*, 2016, 16(13):5319-5324. **Popular Article**
- J5 X.S. Guo, **L. Chu**<sup>#</sup>, B.C. Li. Robust Adaptive LCMV Beamformer Based On An Iterative Suboptimal Solution [J]. in *Radioengineering*, vol. 24, no.2, pp.572-582, 2015.
- J3 F.Wen, **L. Chu**, and Robert C. Qiu, et al. Fast and Positive Definite Estimation of Large Covariance Matrix for High-Dimensional Data Analysis [J]. *IEEE Transactions on Big Data*, vol.7, no.3, pp. 603-609, 2019.
- J1 Z. Ling, Robert C. Qiu, **L. Chu**, et al. An accurate and real-time self-blast glass insulator location method based on faster R-CNN and U-net with aerial images [J], *arXiv preprint arXiv:1801.05143*, CSEE Journal of Power and Energy Systems, 2019.
- C10 **L. Chu**, Abdullah A. Alghafis, Andreas F. Molisch, etc.SA-Loc: Scenario-Adaptive Localization in Dynamic Environment using Adversarial Domain Adaptation Regression. In *IEEE RFID*, 1-6, 2022.
- C9 R. Wang, L. Pei, **L. Chu**, et al. "DVT-SLAM: Deep-Learning Based Visible and Thermal Fusion SLAM." *China Satellite Navigation Conference (CSNC 2021) Proceedings*. Springer, Singapore, 2021.
- C8 **L. Chu**, H. Li, Robert C. Qiu. Lemo: Learn to equalize for mimo-ofdm systems with low-resolution ADCs. *IEEE 20th ICCT*, pp. 328-333, 2020.

- C7 **L. Chu**, H. He, Robert C. Qiu, etc. Label-free Optimization for Passive Beamforming in IRS-assisted MISO Systems [C]. *2020 IEEE 20th ICCT*, pp.157-162, 2020.
- C6 **L. Chu**, Robert C. Qiu, et al. Robust Precoding Design for Coarsely Quantized MU-MIMO Under Channel Uncertainties [C]. *IEEE International Conference on Communications (ICC)*, pp. 1-5, 2019.
- C5 H. He, **L. Chu**, Robert C. Qiu. A New Neural Network Optimized Low-Resolution Min-Sum LDPC Decoder [C]. *IEEE ICC*, pp.1-5, 2019.
- C4 X.S. Guo, **L. Chu**, Pi Y, et al. Two Stages Signal Strength Difference Localization Algorithm Using Sdp Relaxation [C]. *IEEE International Conference on Digital Signal Processing*. IEEE, pp.957-961, 2015.
- C3 X. Guo, B. Li, **L. Chu**, et al. Near-field source localization in complex indoor environment using uniform circular array [C]//2014 *IEEE ChinaSIP*. IEEE, pp.412-415, 2014.
- C2 X. Guo X, Y. Huang, **L. Chu**, et al. DOA estimation of mixed circular and non-circular signals using uniform circular array [C]// *2014 7th International Congress on Image and Signal Processing*. IEEE, pp. 1043-1047, 2014.
- C1 **L. Chu**, X. Guo, B.C. Li, et al. Two-Steps SSD Based Localization Approach In Unknown Path Loss Model Environment [C]. *IEEE China Summit & International Conference on Signal and Information Processing (ChinaSIP)*, pp. 266-270, 2014.

## Research Topic II: Deep Learning for Intelligent Wireless Sensing.....

- J10 **L. Chu**, Robert C. Qiu, et al. Ahd: A Heterogeneous Domain Deep Learning Model for IoT Enabled Smart Health with Few-labeled EEG Data [J], *IEEE Internet of Things Journal*, 2021.
- J9 L. Pei, **L. Chu\***, Robert C. Qiu, et al. MARS: Mixed Virtual and Real Wearable Sensors for Human Activity Recognition with Multi-Domain Deep Learning Model [J]. *IEEE Internet of Things Journal*, 2021.
- J8 D. Liu, **L. Chu\***, et al. A Robust and Reliable Point Cloud Recognition Network Under Rigid Transformation. in *IEEE Transactions on Instrumentation and Measurement*, vol. 71, pp. 1-13, 2022.
- J7 P. Xia, **L. Chu**, P. Ling. Learning Disentangled Representations for Mixed Reality HAR with a Single Sensor. in *IEEE Transactions on Instrumentation and Measurement*, vol. 70, pp. 1-14, 2021.
- J4 F. Zhou, H. Gen, P. Xia, L. Pei, and **L. Chu\***. A Comprehensive Survey on Abnormality Detection in Smart Grids with Multi-Modality Imaginary Data [J], Accepted by *Applied Science*, 2022.
- J3 S. Xia, and **L. Chu**, P. Ling, W. Yu, and R. Qiu. Boundary Consistency-aware Multi-task Learning Framework for Joint Activity Segmentation and Recognition with Wearable Sensors, Accepted by *IEEE Transactions on Industrial Informatics*, 2022.
- J1 F. Wen, **L. Chu**, and Robert C. Qiu, et al. A Survey on Nonconvex Regularization Based Sparse and Low-Rank Recovery in Signal Processing, Statistics, and Machine Learning [J]. *IEEE Access*, 2019, 6(1).
- C4 Xia, S., **L. Chu\***, etc. Multi-level Contrast Network for Wearables-based Joint Activity Segmentation and Recognition. arXiv preprint arXiv:2208.07547, to appear in *IEEE GlobeCom*, 2022.
- C3 Z. Zhang, **L. Chu\***, etc., Openset Mixed-reality Human Acitivity Detection [C], *IEEE GlobeCom*, 2021.

- C2 Q. Yu, **L. Chu\***, Q. Wu, L. Pei, Grayscale and normal guided depth completion with a low-cost lidar, *IEEE International Conference on Image Processing (ICIP)*, 2021.
- C1 F. Xiao, L. Pei, **L. Chu**, et al. A Deep Learning Method for Complex Human Activity Recognition Using Virtual Wearable Sensors [C]. in *ACM SpatialDI*, arXiv preprint arXiv:2003.01874, 2020.

### Research Topic III: Random Matrix Theory for Big Data Modeling and Analysis.....

- J10 **L. Chu**, Robert C. Qiu, et al. Massive Streaming PMU Data Modeling and Analytics in Smart Grid State Evaluation Based on Multiple High-Dimensional Covariance Tests [J]. *IEEE Transactions on Big Data*, 2018, vol. 4, no. 1, pp. 2332-7790. **Popular Article**
- J9 H. Yang, Robert C. Qiu, and **L. Chu**, et al. Improving Power System State Estimation Based on Matrix-Level Cleaning [J], in *IEEE Transactions on Power System*, 35(5): 3529-3540, 2020.
- J8 X. He, **L. Chu**, and Robert C. Qiu, et al. Invisible units detection and estimation based on random matrix theory [J]. in *IEEE Transactions on Power System*, 35(3): 1846-1855, 2019.
- J7 Z. Ling, Robert C. Qiu, **L. Chu**, et al. "A New Approach of Exploiting Self-Adjoint Matrix Polynomials of Large Random Matrices for Anomaly Detection and Fault Location," in *IEEE Transactions on Big Data*, vol. 7, no. 3, pp. 548-558, 2021.
- J6 X. Shi, Robert C. Qiu, **L. Chu**, et al. Anomaly Detection and Location in Distribution Network: A Data-Driven Approach. *IET Generation, Transmission & Distribution*, 2019.
- J5 S. Xu, Robert C. Qiu, and **L. Chu**, et al. "A Deep Learning Approach for Fault Type Identification of Transmission Line [J]." *Proceeding of the CSEE*, 2019, 39(1):65-74.
- J4 X. He, **L. Chu**, Robert C. Qiu, et al. A Novel Data Driven Situation Awareness Approach for Future Grids: Using Large Random Matrices for Big Data Modeling [J]. *IEEE Access*, 2018, 6(1): 13855 - 13865.
- J3 X. He, R. Qiu, **L. Chu**, et al. Spatial-temporal Big Data Analytic Framework for Distribution Network Based on Random Matrix Theory [J]. *Distribution & Utilization*, 2017, 34(6): 13-19.
- J2 X. He, Q. Ai, **L. Chu**, et al. Designing for situation awareness of future power grids: An indicator system based on linear eigenvalue statistics of large random matrices[J]. *IEEE Access*, 2016, 4: 3557-3568.

### Technical Reports, Preprints, and Papers under Review:.....

- C2 **L. Chu**, A. Molisch, etc. On the privacy-preserving localization in B5G Cellular Networks. *In preparation for IEEE Globecom*, 2023.
- J9 **L. Chu**, A. Molisch, etc. Privacy-preserving localization in B5G Cellular Networks with Source free domain adaptation. *In preparation for IEEE Transaction on Wireless Communications*, 2023.
- C1 **L. Chu**, Andreas F. Molisch, etc. Semantic Localization in B5G Cellular Network with High Dynamics: A Multi-task Unsupervised Domain Adaptation Method[C], Under review for IEEE ICC, 2022.
- J8 **L. Chu**, Andreas F. Molisch, etc. Deep Homoscedastic Domain Adaptation for Robust Semantic Localization in B5G Cellular Network with High Dynamics [J], Under review for IEEE JSAC, 2022.
- J7 **L. Chu**, Urbashi Mitra, etc. Exploiting information criterion for deep domain adaptation:unified framework and convergence analysis. Under review for IEEE TSP, 2022.

- J6 **L. Chu**, Zixuan, Zhang, Robert C. Qiu, etc. Securing Mixed Reality Human Activity Recognition with Labeling Space Mismatch: An Information Theoretical Approach [J]. Under review for IEEE Transactions on Reliability, 2022.
- J5 **L. Chu**, L. Pei, X. Guo, Robert C. Qiu, Nirwan Ansari. A Comprehensive Survey for Deep Learning based Mixed Reality Activity Recognition with Wearables: Enabling Technologies and New Perspective [J]. in *Under Review for IEEE Communications Surveys & Tutorials*, 2022.
- J4 **L. Chu**, S. Xia, Robert C. Qiu, etc. Data Efficient Mixed Reality Human Activity Recognition: An Information-Theoretically Semi-supervised Domain Adaption Method[J]. *Under Review for IEEE Transactions on Mobile Computing*, 2022.
- J3 S. Li, Y. Zhang, **L. Chu\***, Robert C. Qiu, etc. Learning Efficient Representations for Enhanced Object Detection on Large-scene SAR Images[J]. arXiv preprint arXiv:2201.08958, Under review for *Journal of Sensors*, 2022.
- J2 B., Daoud, **L. Chu\***, V Rao, AA Alghafis, A. Molisch, et al. A comprehensive survey of machine learning based localization with wireless signals. in Submitted to *IEEE Communications Surveys & Tutorials*, arXiv:2012.11171, 2022.
- J1 D. Liu, C. Chen, Changqing Xu, and Robert C. Qiu, **L. Chu\***. Self-supervised Point Cloud Registration with Deep Versatile Descriptors. *Under Review for IEEE Transactions on Intelligent Transportation Systems*, 2022.
- TR2 X. He, **L. Chu**, and Robert C. Qiu, et al. Data-driven Estimation of the Power Flow Jacobian Matrix in High Dimensional Space [J], *arXiv preprint arXiv:1902.06211*, 2019.
- TR1 **L. Chu**, Robert Qiu, Haichun Liu, Zenan Ling, Tianhong Zhang, and Jijun Wang. "Individual recognition in schizophrenia using deep learning methods with random forest and voting classifiers: Insights from resting state EEG streams." arXiv preprint arXiv:1707.03467, 2017.

## Book Chapters.....

1. Robert C. Qiu, X. He, **L. Chu**, et al. Random Matrix Theory for Analyzing Spatio-Temporal Data [B]. ***Advanced Data Analytics for Power Systems***, Edited by Ali Tajer, Samir Perlaza, Vincent Poor; Cambridge University Press, Cambridge, UK, 2021. ISBN: 9781108494755
2. Robert C. Qiu, **L. Chu**, X. He, et al. Spatio-Temporal Big Data Analysis for Smart Grids Based on Random Matrix Theory [B]. ***Transportation and Power Grid in Smart Cities: Communication Networks and Services***. Edited by Hussein Mouftah, Melike E. Kantarci, Mubashir H. Rehmani; Wiley Press, 2019. ISBN: 9781119360117
3. Robert C. Qiu, X. He, **L. Chu**, et al. Big Data Analysis Of Power Grid From Random Matrix Theory [B]. ***Smarter Energy: From Smart Metering to the Smart Grid***. Edited by Hongjian, Sun, Vincent Poor, Laurence, Carpanini; others]. *The Institution of Engineering and Technology, London*, 2017. ISBN: 9781785611056

## Authorized Patents.....

Ten+ patents (five issued and six pending). Five issued patent numbers are:  
CN201610756596.7; CN201610756617.5; CN 103744053B; CN201410197236.9; CN104010366A.

## Academical or Industrial Projects

---

- **Machine Learning based Joint Communication and Sensing in 5G and Beyond Systems:**  
Project Supporter: CHINA POSTDOCTORAL SCIENCE FOUNDATION;  
Project duration: Jun. 2020 - Jun. 2022; Money: 300,000 RMB  
Role in Project: **Principal Investigator**, Deep/Machine Learning for Enhanced Channel Modeling; Physical Model based Machine Learning Algorithms Design; Joint Channel Estimation and Activity Recognition under Ultra-dense/High-mobility Environment.
- **A Non-convex Regularized Optimization for High Dimensional Covariance Matrix Estimation:**  
Project Supporter: National Natural Science Foundation of China ;  
Project duration: Dec. 2018 - Dec. 2022; Money: 460,000 RMB  
Role in Project: Key Researcher, Responsible for Regularizers Design, Convergence Analysis, and Case Studies Verification.
- **Research on Massive MIMO Systems with Low-resolution ADCs/DACs:**  
Project Supporter: National Natural Science Foundation of China.;  
Project duration: Dec. 2015 - Dec. 2019. Money: 570,000 RMB  
Role in Project: Key Researcher, Responsible for Capacity Analysis with Random Matrix Theory and Efficient Precoding Design with Robust Non-convex Optimization.
- **Deep Learning based Pre-diagnosis of Schizophrenia with Big EEG Data:**  
Project Supporter: Shanghai Mental Health Center;  
Project duration: Dec. 2015 - Dec. 2018; Money: 150,000 RMB  
Role in Project: Key Researcher, responsible for EEG data processing and CNN-based algorithms design (Neural Network Structure Designing and Parameters Optimization).

## SELECTED AWARDS

---

- Jun. 2020 International Postdoctoral Exchange Fellowship.
- Mar. 2020 Outstanding Ph.D. Graduate of Shanghai Jiao Tong University.
- Dec. 2019 Fushou Li Siyuan Research Scholarship.
- Jan. 2019 Outstanding SJTU Ph.D. Candidate Research Scholar for Oversea Study.
- Jun. 2015 The Excellent Thesis for Master's Degree of UESTC (Top 1.82%).
- May. 2015 The Outstanding Graduate of UESTC (Top 4.07%).
- Jan. 2015 The Excellent Graduate of Sichuan Province (Top 1%).
- Dec. 2014 China National Scholarship, Highest scholarship given by Chinese government, Top 0.1%.

## Academic Talks/Tutorials

---

- On Nov. 15, 2018, I was invited to give a talk at Jinan University on "*Random Matrix Theory for Massive MIMO Systems with Low-resolution Data Converters*". The host is Prof. Jingming Wen.

- On Dec.4–8, 2022, Together with B., Daoud, A. Molisch, I will give an **THREE HOURS LONG TALK in IEEE Communication Flagship Conference Globecom**, entitled "*Scalable, accurate, and privacy-preserving localization in B5G Cellular Networks*".

## Teaching and Academic Advising Experience

---

- From 2016 to 2019, I was a research assistant for the Center of Big Data and Artificial Intelligence, Shanghai Jiao Tong University.
- From 2017 to 2018, I was a teaching assistant for the course: "*Introduction to Random Matrix Theory and Its Application in Advanced Power Data Analytics*";

Supervised Students/Alumni:

- 1) Songpengcheng, Xia, Male, Ph.D. Candidate, (Co-supervised with Prof. Ling Pei), "*Exploiting Efficient Representation Learning for Mixed Reality Activities Detection and Reconstruction*", Shanghai Jiao Tong University, Dec. 2020 - Dec. 2022.
- 2) Zixuan Zhang, Female, Master Candidate, (Co-supervised with Prof. Ling Pei), "*Open-set Mixed Reality Activities Recognition*", Shanghai Jiao Tong University, Sep. 2020 - Jun. 2022.
- 3) Chang Hayley, Female, Undergraduate, (Co-supervised with Prof. Andreas F. Molisch), "*Label Efficient Deep Learning based Localization in Highly Dynamic Environment*", University of Southern California, Jun.- Aug., 2022.
- 4) Zikun Liu, Male, Graduate, (Co-supervised with Prof. Andreas F. Molisch), "*Ultra-dense Localization in GPS-denial areas with WiFi signals*", University of Southern California, Sep.-Dec., 2022.

## Memberships and Academic Service

---

### Academic Memberships.....

- **IEEE Senior Member**, since 2022;  
IEEE Communications Society Membership;  
IEEE Big Data Community;  
IEEE Engineering in Medicine and Biology Society Technical Committee on Wearable Biomedical Sensors and Systems;  
IEEE Computer Society Special Tech Community on Reliable, Safe, Secure and Time Deterministic Intelligent Systems.  
IEEE Engineering in Medicine and Biology Society Technical Committee on Neuroengineering;  
IEEE Computer Society Technical Community on Pattern Analysis and Machine Intelligence;  
IEEE Computer Society Special Technical Community on Smart and Circular Cities.

### Peer reviewing service.....

- I serve(d) as a regular reviewer for 20 referred international journals:
  - 1) *IEEE Transactions on Signal Processing*;
  - 2) *IEEE Transactions on Wireless Communication*;
  - 3) *IEEE Transactions on Big Data*;

- 4) *IEEE Transactions on Multimedia*;
  - 5) *IEEE Transactions on Communications*;
  - 6) *IEEE Transactions on Vehicular Technology*;
  - 7) *IEEE Transactions on Industrial Electronics*;
  - 8) *IEEE Wireless Communications Magazine*;
  - 9) *IEEE Journal of Biomedical and Health Informatics*;
  - 10) *IEEE Wireless Communications Letters*;
  - 11) *IEEE Communications Letters*;
  - 12) *IEEE Access*;
  - 13) *Signal, Image and Video Processing*;
  - 14) *International Journal of Electronics*;
  - 15) *Digital Signal Processing*;
  - 16) *Sensors*;
  - 17) *Applied Sciences*;
  - 18) *Concurrency and Computation: Practice and Experience*;
  - 19) *Frontiers in Neurorobotics*;
  - 20) *Knowledge-Based Systems*.
- I served as a conference reviewer for top-tier venues:
    - 1) *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*;
    - 2) *IEEE International Conference on Image Processing (ICIP)*.
  - I served as a **book reviewer** for the text book entitled:
 

*"Deep Learning: Theory, Architectures, and Applications in Speech, Image and Language Processing"*
  - Editorial/Technical Program Committee (TPC) Service.....
  - **Editorial Service**
    - 1) Leading Guest Editor for the special issue **"When Mixed Reality Meets Smart Sensing with Wearables: The Pursuit for Efficiency, Interpretability, and Trustworthiness"** in *Applied Sciences*;
    - 2) **Associate Editor**, *Journal of Artificial Intelligence and Big Data*, since 2022.
    - 3) **Editorial Board Member**, *Modern Intelligent Times (MIT, 2957-7942)*, since 2022.
  - **Technical Program Committee** for the peer-reviewed conferences:
    - 1) *IEEE Annual International Conference on Network and Information Systems for Computers, 2022*.
    - 2) *The IOP International Conference on Computer Networks and Communications, 2022*.

## Website Identification

---

- **Google Scholar:** <https://scholar.google.com/citations?user=HgZ0wNwAAAAJ&hl=en>
- **Publons:** <https://publons.com/researcher/3175259/lei-chu/>
- **Researchgate:** <https://www.researchgate.net/profile/Lei-Chu-8>



## References

---

- **Dr. Andreas F. Molisch**, Fellow of the National Academy of Inventors, Fellow of the AAAS, Fellow of the IEEE, Professor of Electrical Engineering, University of Southern California, USA.  
Email: **molisch@usc.edu**
- **Dr. Robert C. Qiu**, Fellow of the IEEE, Endowed Professor at Huazhong University of Science and Technology, China. Email: **caiming@hust.edu.cn**
- **Dr. Ling Pei**, Pujiang Talent, Full Professor at Shanghai Jiao Tong University (SJTU).  
Email: **ling.pei@sjtu.edu.cn**
- **Dr. Husheng Li**, Full Professor at Purdue University, West Lafayette, IN, USA.  
Email: **hli31@utk.edu**
- **Dr. Nirwan Ansari**, Fellow of the IEEE, Distinguished Professor of Electrical and Computer Engineering, New Jersey Institute of Technology, USA. Email: **nirwan.ansari@njit.edu**