

## Xinqiang Chen

- Shanghai Maritime University
- No. 1550 Haigang Ave., Shanghai, P.R. China
- (+86) 18521317621
- chenxinqiang@stu.shmtu.edu.cn
- <https://xinqiangchentraffic.github.io/>



## Education Background & Work

---

1. 2018.7- Now Shanghai Maritime University *Institute of logistics science & engineering* **Assistant Professor, Master Supervisor**
2. 2020.05-Now: Fudan University *Department of Atmospheric and Oceanic Sciences* **Research Associate**
3. 2013.9-2018.6 Shanghai Maritime University *Traffic Information Engineering* Ph.D.
4. **2015.9-2016.9 University of Washington Traffic Engineering Visiting Ph.D.**
5. 2010.9-2012.7 Shanghai Maritime University *Traffic Information Engineering* Master

## Research Interests

---

6. Video data - driven intelligent complex environment perception and understanding
7. Visual navigation for IGV under unmanned port, smart shipping
8. Transportation data analysis
9. Traffic Safety
10. Connected Vehicle

## Selected Publications (\* represents the corresponding author)

---

1. **Xinqiang Chen**, Zhibin Li, Yongsheng Yang, Lei Qi, Ruimin Ke (2021). "*High-Resolution Vehicle Trajectory Extraction and Denoising from Aerial Videos*" IEEE Transactions on Intelligent Transportation Systems, 22(5): 3190-3202. (**SCI, ESI, Hot paper**).
  2. **Xinqiang Chen**, Yongsheng Yang, Shengzheng Wang, Huafeng Wu, Jinjun Tang, Jiansen Zhao, Zhihuan Wang (2020). "*Ship Type Recognition via a Coarse-to-Fine Cascaded Convolution Neural Network*", Journal of Navigation, 73(4), 813-832. (**SCI, ESI**).
  3. **Xinqiang Chen**, Shengzheng Wang, Chaojian Shi, Huafeng Wu, Jiansen Zhao, Junjie Fu (2019). "*Robust ship tracking via multi-view learning and sparse representation*", Journal of Navigation, 72(1), 176-192. (**SCI, ESI**).
  4. **Xinqiang Chen**, Xueqian Xu, Yongsheng Yang, Huafeng Wu, Jinjun Tang, Jiansen Zhao (2020). "*Augmented Ship Tracking under Occlusion Conditions from Maritime Surveillance Videos*" IEEE ACCESS, 8(1), 42884-42897. (**SCI, ESI**).
-

5. **Xinqiang Chen**, Huixing Chen, Xianglong Xu, Lijuan Luo, Salvatore Antonio Biancardo. "Ship tracking for maritime traffic management via a data quality control supported framework " Multimedia tools and applications, (SCI, Accepted).
  6. **Xinqiang Chen**, Jun Lin, Yongsheng Yang, Shengzheng Wang, Lijuan Luo, Ying Yan (2021). "Ship Detection from Coastal Surveillance Videos via an Ensemble Canny-Gaussian-Morphology Framework" Journal of Navigation, 74(6): 1252-1266. (SCI).
  7. **Xinqiang Chen**, Huixing Chen, Yongsheng Yang, Huafeng Wu, Wenhui Zhang, Jiansen Zhao, Yong Xiong (2021). " Traffic flow prediction by an ensemble framework with data denoising and deep learning model " Physica A: Statistical Mechanics and Its Applications, 565(2021), 1-11. (SCI).
  8. **Xinqiang Chen**, Xueqian Xu, Yongsheng Yang, Yanguo Huang, Jing Chen, Ying Yan (2021). "Visual Ship Tracking via a Hybrid Kernelized Correlation Filter and Anomaly Cleansing Framework" Applied Ocean Research, 106(2021), 1-10. (SCI).
  9. **Xinqiang Chen**, Shubo Wu, Chaojian Shi, Yanguo Huang, Yongsheng Yang, Ruimin Ke, Jiansen zhao (2020). " Sensing Data Supported Traffic Flow Prediction via Denoising Schemes and ANN: A Comparison" IEEE Sensors Journal, 20(23), 14317-14328. (SCI).
  10. **Xinqiang Chen**, Jun Ling, Yongsheng Yang, Hailing Zheng, Pengwen Xiong, Octavian Postolache (2020). " Ship Trajectory Reconstruction from AIS Sensory Data via Data Quality Control and Prediction" Mathematical Problems in Engineering, 1-9. (SCI).
  11. **Xinqiang Chen**, Jinquan Lu, Jiansen Zhao, Zhijian Qu, Yongsheng Yang, Jiangfeng Xian (2020). "Traffic Flow Prediction at Varied Time Scales via Ensemble Empirical Mode Decomposition and Artificial Neural Network" Sustainability, 12, 1-17. (SCI).
  12. **Xinqiang Chen**, Huixing Chen, Huafeng Wu, Yanguo Huang, Yongshegn Yang, Wenhui Zhang, Pengwen Xiong (2020). "Robust Visual Ship Tracking with an Ensemble Framework via Multi-view Learning and Wavelet Filter" Sensors, 20(3), 1-17 (SCI)
  13. **Xinqiang Chen**, Lei Qi, Yongsheng Yang, Qiang Luo, Octavian Postolache, Jinjun Tang, Huafeng Wu (2020). "Video-based Detection Infrastructure Enhancement for Automated Ship Recognition and Behavior Analysis", Journal of Advanced Transportation, 2020, 1-12 (SCI).
  14. **Xinqiang Chen**, Xianglong Xu, Jing Peng, Yang Sun, Zichuang Wang, Ying Yan. " Maritime traffic pattern recognition based on Douglas-Peucker and Quick Bundles models", Journal of Shanghai Maritime University, Accepted
  15. **Xinqiang Chen**, Jun Ling, Lei Qi, Yongsheng Yang, Yamin Zou (2021). " Multi-Targets Ship Tracking via a Multi-Dimension Features Fusion and Scale Estimation " Computer Engineering and Applications, 57(13), 246-250.
  16. **Xinqiang Chen**, Zhibin Li, Yinhai Wang, Jinjun Tang, Wenbo Zhu, Chaojian Shi, Huafeng Wu (2018). "Anomaly Detection and Cleaning of Highway Elevation Data
-

- from Google Earth Using Ensemble Empirical Mode Decomposition*", Journal of Transportation Engineering, Part A: Systems, 144(5), 1-14. (SCI).
17. **Xinqiang Chen**, Zhibin Li, Yinhai Wang, Zhiyong Cui, Chaojian Shi, and Huafeng Wu (2017). "*Evaluating the impacts of grades on vehicular speeds on interstate highways*", PloS one, 12(9), 1-15. (SCI).
  18. Shubo Wu, **Xinqiang Chen\***, Chaojian Shi, Junjie Fu, Ying Yan, Shengzheng Wang. "*Ship Detention Prediction via Feature Selection Scheme and Support Vector Machine (SVM)*" Maritime Policy & Management, 1-14, (SCI).
  19. Junjie Fu, **Xinqiang Chen\***, Shubo Wu, Chaojian Shi, Yongsheng Yang, Jiangfeng Xian (2020). "*Ship Detention Situation Prediction via Optimized Analytic Hierarchy Process and Naive Bayes Model*" Mathematical Problems in Engineering, 2020, 1-11. (SCI).
  20. Junjie Fu, **Xinqiang Chen\***, Shubo Wu\*, Chaojian Shi, Huafeng Wu, Jiansen Zhao, and Pengwen Xiong (2020). "*Mining Ship Deficiency Correlations from Historical Port State Control (PSC) Inspection Data*" PloS one, 15(2), 1-19. (SCI).
  21. Jiansen Zhao, Jinquan Lu, **Xinqiang Chen\***, Zhongwei Yan, Ying Yan, Yang Sun. "*High-Fidelity data supported Ship Trajectory Prediction via an Ensemble Machine Learning Framework*" Physica A: Statistical Mechanics and its Applications, 586(2022), 1-10, (SCI).
  22. Jinjun Tang, Jin Hu, Wei Hao, **Xinqiang Chen\*** and Yong Qi\* (2020). "*Markov Chains based route travel time estimation considering link spatio-temporal correlation*" Physica A: Statistical Mechanics and its Applications, 545(2020), 1-13. (SCI).
  23. Qiang Luo, Jie Yuan, **Xinqiang Chen\***, Shubo Wu, Zhijian Qu, and Jinjun Tang\* (2019). "*Analyzing start-up time headway distribution characteristics at signalized intersections*", Physica A: Statistical Mechanics and its Applications, 535(2019), 1-10 (SCI).
  24. Zhijian Qu, Xubing Sun, **Xinqiang Chen\***, and Shengao Yuan (2019). "*A novel RFID multi-tag anti-collision protocol for dynamic vehicle identification*" PloS one, 14(7): e0219344 (SCI).
  25. Qiang Luo, Xiaodong Zang, Jie Yuan\*, **Xinqiang Chen\***, Junheng Yang, Shubo Wu (2020). "*Research of Vehicle Rear-End Collision Model considering Multiple Factors* " Mathematical Problems in Engineering, vol. 2020 (SCI).
  26. Qiang Luo, Jie Yuan\*, **Xinqiang Chen\***, Junheng Yang, Wenhui Zhang and Jiansen Zhao (2019). "*Research on mixed user equilibrium model based on mobile internet traffic information service*" IEEE ACCESS, 7, 164775-164791 (SCI).
  27. Jinjun Tang, Fan Gao, Fang Liu, **Xinqiang Chen\*** (2020). "*A Denoising Scheme Based Traffic Flow Prediction Model: Combination of Ensemble Empirical Mode Decomposition and Fuzzy C-means Neural Network*" IEEE ACCESS, vol. 8, 11546-11559 (SCI).
-

28. Qiang Luo, **Xinqiang Chen**, Jie Yuan, Xiaodong Zang, Junheng Yang and Jing Chen (2020). "Study and Simulation Analysis of Vehicle Rear-End Collision Model considering Driver Types" *Journal of Advanced Transportation*, vol. 2020: 1-11. (SCI).
  29. Jinjunn Tang, **Xinqiang Chen**, Zheng Hu, Fang Zong, Chunyang Han, and Leixiao Li (2019). "Traffic flow prediction based on combination of support vector machine and data denoising schemes" *Physica a-statistical mechanics and its applications*, vol. 534, 120642. (SCI).
  30. Wen Liu, Yuanqiao Wen, **Xinqiang Chen**, and Yuxu Lu (2021). "An enhanced CNN-enabled learning method for promoting ship detection in maritime surveillance system," *Ocean Engineering*, vol. 235, p. 109435. (SCI).
  31. Jinjun Tang, Shen Zhang, **Xinqiang Chen**, Fang Liu, and Yajie Zou (2018). "Taxi trips distribution modeling based on Entropy-Maximizing theory: A case study in Harbin city-China" *Physica A: Statistical Mechanics and its Applications*, vol. 493: 430-443. (SCI).
  32. Jiansen Zhao, **Xinqiang Chen**, Shengzheng Wang, Wei Liu, Baoxian Ji, Yue Liu, Zhen Sun, and Tie Xu (2017). "A Study of the Characteristics of a Deformable Antenna Based on Gas Discharge" *IEEE Transactions on Antennas and Propagation*, vol. 66, no. 1: 59-70. (SCI).
  33. Huafeng Wu, Xiaojun Mei, **Xinqiang Chen**, Junjun Li, Jun Wang, and Prasant Mohapatra (2018). "A novel cooperative localization algorithm using enhanced particle filter technique in maritime search and rescue wireless sensor network" *ISA transactions*, vol. 78: 39-46. (SCI).
  34. Zhijian Qu, Hanxin Liu, Hailin Wang, **Xinqiang Chen**, Rui Chi, Zixiao Wang (2020). "Cluster equilibrium scheduling method based on backpressure flow control in railway power supply systems" *PLoS ONE*, vol. 15, no. 12: 1-23 (SCI).
  35. Salvatore Antonio Biancardo, Francesco Avella, Ernesto Di Lisa, **Xinqiang Chen**, Francesco Abbondati, Gianluca Dell'Acqua (2021). "Multiobjective Railway Alignment Optimization Using Ballastless Track and Reduced Cross-Section in Tunnel" *Sustainability*, 13: 1-19, (SCI).
  36. Ruyi Feng, Changyan Fan, Zhibin Li, **Xinqiang Chen** (2020). "Mixed Road User Trajectory Extraction from Moving Aerial Videos based on Convolution Neural Network Detection" *IEEE ACCESS*, 1-12 (SCI).
  37. Jinjun Tang, Shaowei Yu, Fang Liu, **Xinqiang Chen**, and Helai Huang (2019). "A hierarchical prediction model for lane-changes based on combination of fuzzy C-means and adaptive neural network" *Expert Systems with Applications*, vol. 130: 265-275. (SCI).
  38. Wenhui Zhang, Yongmin Su, Ruimin Ke, and **Xinqiang Chen** (2018). "Evaluating the influential priority of the factors on insurance loss of public transit" *PloS one*, vol. 13, no. 1: e0190103. (SCI).
  39. Jiansen Zhao, Shengzheng Wang, Huafeng Wu, Yue Liu, Yongmeng Chang, and
-

**Xinqiang Chen** (2017). "*Flexible plasma linear antenna*" Applied Physics Letters, vol. 110, no. 9: 094108. (SCI).

40. **Xinqiang Chen**, Yongsheng Yang, Huafeng Wu, Ruimin Ke. "*Detecting Ships from Coastal Surveillance Videos with a Canny-Gaussian Morphology Framework*" The 99th Annual Meeting of Transportation Research Board, 2020, (**Poster Presentation**).
41. **Xinqiang Chen**, Zhibin Li, Yongsheng Yang, Huafeng Wu, Ruimin Ke, and Wenzhu Zhou. "*Extracting and Denoising Vehicle Trajectory Automatically from Aerial Roadway Surveillance Videos*" The 98th Annual Meeting of Transportation Research Board, No. 19-03147, 2019, (**Poster Presentation**).
42. Zhibin Li, **Xinqiang Chen\***, Lei Ling, Huafeng Wu, Wenzhu Zhou, and Cong Qi. "*Accurate Traffic Parameter Extraction from Aerial Videos with Multi-Dimensional Camera Movements*" The 98th Annual Meeting of Transportation Research Board, No. 19-02817, 2019, (**Poster Presentation**).
43. **Xinqiang Chen**, Chaojian Shi, Shengzheng Wang, Huafeng Wu, Zhibin Li, and Jibiao Zhou. "*Recognizing typical merchant ship categories based on a deep network*" The 97th Annual Meeting of Transportation Research Board, No. 18-02544. 2018, (**Poster Presentation**).
44. **Xinqiang Chen**, Chaojian Shi, Shengzheng Wang, Huafeng Wu, Jiansen Zhao, and Zhibin Li. "*Automatic tracking of ships based on maritime surveillance videos*" The 97th Annual Meeting of Transportation Research Board, No. 18-02553. 2018, (**Poster Presentation**).

## Paper in review (\* represents the corresponding author)

---

1. **Xinqiang Chen**, Zichuang Wang, Zhibin Li, Yongsheng Yang, Ruimin Ke, Octavian Postolache. "*Traffic parameter exploitation from unmanned aerial videos under multi-dimension camera movement interference*" IEEE Transactions on Instrumentation & Measurement, (SCI, under review).
  2. **Xinqiang Chen**, Jinbiao Zheng, Daolun Feng, Bing Wu, Jakub Montewka, Salvatore Antonio Biancardo. " *Maritime traffic situation awareness analysis via high-fidelity ship imaging trajectory*" Journal of Navigation, (SCI, under review).
  3. **Xinqiang Chen**, Zichuang Wang, Qiaozhi Hua, Wenlong Shang, Qiang Luo, Keping Yu. " *AI-Empowered Speed Extraction via Port-like Videos for Vehicular Trajectory Analysis* " IEEE Transactions on Intelligent Transportation Systems, (SCI, under review).
  4. **Xinqiang Chen**, Xingyu Wu, Dilip K. Prasad, Bing Wu\*, Octavian Postolache, Yongsheng Yang. " *Pixel-wise Ship Identification from Maritime Images via a Semantic Segmentation Model* " IEEE Sensors Journal, (SCI, under review).
-

## Participated Projects

---

1. Ship trajectory tracking from maritime images under hybrid navigation environment interference, **National Natural Science Foundation of China, PI**
2. **China Postdoctoral Science Foundation (No. 2021M700790), PI**
3. **Fund of National Engineering Research Center for Water Transport Safety (No. A2022003), PI**
4. **Foundation for Jiangsu key Laboratory of Traffic and Transportation Security (No. TTS2021-05), PI**
5. **Fund of Hubei Key Laboratory of Inland Shipping Technology (NO. NHHY2021002), PI**
6. Highway Grade Characterization and Operating Efficiency Methods, Tools and Data Development (**Sponsored by Federal Highway Administration**).
7. Drive net phase II: Online moving Washington platform for network-wide system operations, monitoring and analysis (**Sponsored by Washington State Department of Transportation**).
8. Regional Map Based Analytical Platform for State-Wide Highway Safety Performance Assessment (**Sponsored by Regional Transportation Center for Federal Region 10**).
9. The three-dimensional dynamic cooperative localization mechanism of ocean sensor network based on the ocean wave shielding effect model (**Sponsored by National Natural Science Foundation of China**)
10. Dynamic topology and spatial-temporal stochastic coverage mechanism of maritime search and rescue wireless sensor networks (**Sponsored by National Natural Science Foundation of China**).
11. Maritime target detection via GNSS-R and heterogeneous sensor information fusion method for maritime surveillance (**Sponsored by National Natural Science Foundation of China**).
12. Energy-friendly route design based on big data and machine learning (**Sponsored by Shanghai Municipal Education Commission**).
13. Study on the mechanism of dynamic topology and temporal and spatial random coverage of wireless sensor network in maritime search and rescue (**Sponsored by Shanghai Municipal Education Commission**).

## Academic Service/Honors/Memberships

---

- **Leading Guest Editor** for Journal of Advanced Transportation (SCI, 2021)
- **Guest Editor** for Sensors (SCI, 2021)
- **Guest Editor** for Applied Sciences (SCI, 2021)
- **Guest Editor** for Sustainability (SCI, 2020)
- **Guest Editor** for Frontier Frontiers in Future Transportation (2021)

- 
- **Area Editor** for the COTA CICTP (2020-21, **Best Area Editor award**)
  - **Session Chair** for the 3rd International Conference of the Yangtze River Research and Innovation Belt (2020)
  - **Outstanding Reviewer** of Maritime Policy & Management (SCI)
  - **Outstanding Reviewer** of Journal of King Saud University-Computer and Information Sciences (ESCI)
  - Member of TRB AW010(3) Subcommittee on Port Performance
  - Academic Committee Member of World Transport Convention 2018, 2019, 2020 (WTC 2018, 2019, 2020)
  - Member of Technical Program Committee of International Conference on Data Science and Business Analytics (ICDSBA 2018)
  - Member of Technical Program Committee of International Conference on Sensing and Instrumentation in IoT Era (ISSI 2018)
  - Member of Technical Program Committee of 2018 the third International Conference on Electrical, Control and Automation Engineering (ECAE2018)
  - Committee Member of 2018 International Symposium on Traffic Transportation and Civil Architecture (ISTTCA 2018)
  - **Editorial Board Member** of SCIREA Journal of Computer
  - **Editorial Board Member** of SCIREA Journal of Information Science and Systems Science
  - **Editorial Board Member** of SCIREA Journal of Traffic and Transportation
  - **Editorial Board Member** of Journal of Shipping and Ocean Engineering
  - **Editorial Board Member** of International Journal of Transportation Engineering and Technology
  - Member of International Association of Engineers
  - Second-class prizes of outstanding graduate students achievements of Shanghai Maritime University
  - Reviewer of IEEE Transactions on Intelligent Transportation Systems (SCI)
  - Reviewer of IEEE Transactions on Neural Networks and Learning Systems (SCI)
  - Reviewer of IEEE Transactions on Multimedia (SCI)
  - Reviewer of ACM Transactions on Intelligent Systems and Technology (SCI)
  - Reviewer of Ocean Engineering (SCI)
  - Reviewer of Maritime Policy & Management (SCI)
  - Reviewer of IET Intelligent Transportation Systems (SCI)
  - Reviewer of Transportation Research Record (SCI)
  - Reviewer of IEEE Sensors Journal (SCI)
  - Reviewer of Journal of Transportation Engineering, Part A: Systems (SCI)
  - Reviewer of Geo-spatial Information Science (SCI)
  - Reviewer of Journal of Navigation (SCI)
  - Reviewer of Computer Journal (SCI)
  - Reviewer of Connection Science (SCI)

- 
- Reviewer of Circuit World (SCI)
  - Reviewer of Journal of Intelligent Transportation Systems Technology, Planning, and Operations (SCI)
  - Reviewer of Transport Policy (SCI)
  - Reviewer of Journal of Computational Design and Engineering (SCI)
  - Reviewer of International Journal of Remote Sensing (SCI)
  - Reviewer of Physica A: Statistical Mechanics and Its Applications (SCI)
  - Reviewer of Journal of Transport and Land Use (SCI)
  - Reviewer of Mathematics (SCI)
  - Reviewer of Alexandria Engineering Journal (SCI)
  - Reviewer of International Journal of Environmental Research and Public Health (SCI)
  - Reviewer of Journal of Advanced Transportation (SCI)
  - Reviewer of Scientific Programming (SCI)
  - Reviewer of Transportmetrica B: Transport Dynamics (SCI)
  - Reviewer of Advances in Civil Engineering (SCI)
  - Reviewer of Journal of Marine Science and Engineering (SCI)
  - Reviewer of IEEE ACCESS (SCI)
  - Reviewer of PLoS ONE (SCI)
  - Reviewer of Sustainability (SCI)
  - Reviewer of Sensors (SCI)
  - Reviewer of Processes (SCI)
  - Reviewer of Energies (SCI)
  - Reviewer of Entropy (SCI)
  - Reviewer of Mathematical Problems in Engineering (SCI)
  - Reviewer of International Journal of Information Technology and Web Engineering (EI)
  - Reviewer of Journal of King Saud University - Computer and Information Science (ESCI)
  - Reviewer of The Journal of Engineering
  - Reviewer of International Journal of Transportation Science and Technology Reviewer of Smart Cities
  - Reviewer of International Journal of Transportation Science and Technology
  - Reviewer of TRB (ABJ50 committee)
  - Reviewer of TRB (ADB20 committee)
  - Reviewer of TRB (ABJ70 committee)
  - Reviewer of the COTA International Conference of Transportation Professionals (CICTP 2017, CICTP 2018, CICTP 2019, CICTP 2020, CICTP 2022)
  - Reviewer of International Conference on Physics, Mathematics and Statistics (ICPMS 2018)
  - Reviewer of the World Transport Convention (WTC 2018, WTC 2019, WTC 2020, WTC 2021)



- 
- Reviewer of International Conference on Data Science and Business Analytics (ICDSBA 2018)
  - Reviewer of International Conference on Sensing and Instrumentation in IoT Era (ISSI 2018, ISSI 2019)
  - Reviewer of ASCE International Conference on Transportation & Development (ICTD 2020)
  - Reviewer of International Conference on Fuzzy Systems and Data Mining (FSDM 2020)
-