

## 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

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

## Research Interests

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

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

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1. **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*, 1-15. (SCI).
  2. **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).
  3. **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).
  4. **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).
  5. **Xinqiang Chen**, Xueqian Xu, Yongsheng Yang, Huafeng Wu, Jinjun Tang, Jiansen
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- Zhao (2020). "Augmented Ship Tracking under Occlusion Conditions from Maritime Surveillance Videos" IEEE ACCESS, 8(1), 42884-42897. (SCI, ESI).
6. **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).
  7. **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).
  8. **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).
  9. **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).
  10. **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).
  11. **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)
  12. **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).
  13. **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.
  14. **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).
  15. **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).
  16. Shubo Wu, **Xinqiang Chen\***, Chaojian Shi, Junjie Fu, Ying Yan, Shengzheng Wang. " Ship Detention Prediction via Feature Selection Scheme and Support Vector Machine
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- (SVM)" Maritime Policy & Management, 1-14, (SCI).
17. 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).
  18. 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).
  19. 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).
  20. 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).
  21. 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).
  22. 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).
  23. 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).
  24. 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).
  25. 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).
  26. 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).
  27. 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).
  28. Jinjun Tang, Shen Zhang, **Xinqiang Chen**, Fang Liu, and Yajie Zou (2018). "*Taxi trips*
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*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).

29. 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).
30. 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).
31. 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).
32. 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).
33. 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).
34. 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).
35. 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).
36. **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).
37. **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).
38. 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).
39. **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**).

40. **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)

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1. **Xinqiang Chen**, Zhibin Li, Yongsheng Yang, Ruimin Ke. "*Microscopic Traffic Parameter Extraction from Aerial Videos with Multi-Dimensional Camera Movements*" Journal of Intelligent Transportation Systems, (**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*" Ocean Engineering, (**SCI, under review**).
3. **Xinqiang Chen**, Xueqian Xu, Yongsheng Yang, Huafeng Wu, Jinjun Tang, Pengwen Xiong, Jiansen Zhao. "*Real-time ship tracking under challenge of scale variation and different visibility weather conditions*" Journal of Advanced Transportation, (**SCI, under review**).
4. **Xinqiang Chen**, Huixing Chen, Yongsheng Yang, Huafeng Wu, Octavian Postolache, Jiansen Zhao, Ying Yan. "*Ship Tracking from Maritime Surveillance Videos via an Ensemble Model*" Maritime Policy & Management, (**SCI, under review**).
5. Ying Yan, Xianglong Xu, **Xinqiang Chen\***, Xin Su, Zhongyin Guo, Huazhi Yuan. "*Simulation supported traffic risk modeling and analysis for autonomous vehicle*" Traffic Injury Prevention, (**SCI, under review**).
6. 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, (**SCI, under review**).

## Participated Projects

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- Ship trajectory tracking from maritime images under hybrid navigation environment interference (**Sponsored by National Natural Science Foundation of China**), **PI**
- Highway Grade Characterization and Operating Efficiency Methods, Tools and Data Development (**Sponsored by Federal Highway Administration**).
- Drive net phase II: Online moving Washington platform for network-wide system operations, monitoring and analysis (**Sponsored by Washington State Department of Transportation**).
- Regional Map Based Analytical Platform for State-Wide Highway Safety Performance

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Assessment (**Sponsored by Regional Transportation Center for Federal Region 10**).

- 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**)
- Dynamic topology and spatial-temporal stochastic coverage mechanism of maritime search and rescue wireless sensor networks (**Sponsored by National Natural Science Foundation of China**).
- Maritime target detection via GNSS-R and heterogeneous sensor information fusion method for maritime surveillance (**Sponsored by National Natural Science Foundation of China**).
- Energy-friendly route design based on big data and machine learning (**Sponsored by Shanghai Municipal Education Commission**).
- 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**

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- **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 (2021)
- **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)

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- **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 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 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 IEEE ACCESS (SCI)
  - Reviewer of PLoS ONE (SCI)
  - Reviewer of Sustainability (SCI)
  - Reviewer of Sensors (SCI)

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- 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 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)
  - 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)
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