Yongqi Dong

https://yongqidong.github.io/

Ph.D. Researcher | Delft University of Technology

Email:Y.Dong-4@tudelft.nl | **TEL**: (+31) 0616619399

EDUCATIONAL BACKGROUND

Ph.D. Researcher, Department of Transport and Planning, **Delft University of Technology**, **TU Delft** Dec.2019-Present

Applied Deep Learning, Artificial Intelligence and Big Data in Automated Vehicles Research

Thesis: Data-Driven Research for Expanding Automated Vehicles Operational Design Domain in Mixed Traffic (*Safe, Efficient, and Socially Compliant Autonomous Driving*)

Courses: IBM edX Deep Learning Professional Certificate, Behavioral Aspects in Transport, Traffic Flow Theory and AI, Data-analysis & Statistics, Coaching Students and Project Groups

Graduate Research Assistant, Faculty of Engineering, **University of Waterloo** May.2018-Sep.2019

Applied Machine Learning, Artificial Intelligence and Big Data in Transportation

Courses: Statistical Learning-Classification (A, Top 3%), Urban Transportation Planning (93)

Master of Control Science and Engineering, Department of Automation, **Tsinghua University** Sep.2014-Jul.2017

Minor: Master Project For Improving Ability in *Big Data* | **GPA: 87/100**

Thesis: Data-Driven Analysis on Group Behaviors of Taxi Drivers and Ridesourcing Drivers

Nominated for Tsinghua University Outstanding Master Thesis Dissertation

Core Courses: *Big Data*: The Core Technology of Big Data Platform (89), Big Data: Governance and Policy (92), Data Ethics (90), Big Data Systems

Mobility: Intelligent Transportation Systems Modeling and Simulation (88), Modern Signal Processing (90, Rank NO.2)

Math: Convex Optimization (87, Top 5%), Stochastic Processes

Bachelor of Telecommunication Engineering Sep.2010-Jul.2014

School of Electronic and Information Engineering, **Beijing Jiaotong University**

GPA: 91.5/100 | Rank: 1/202 | Postgraduate Recommendation to Tsinghua University without examination

Thesis: Design of vehicle-mounted data acquisition and communication unit for the WMN based locomotive remote control

Outstanding Undergraduate Thesis

Core Courses: *ECE*: *C* Programming (97), Analog & Digital Electronics Technology A (92), Digital Signal Processing A (93), Principle and Interface Tech of Microcomputer A (96), Computer Networks (98), All Optical Networks (99)

Math & Physics: Calculus B II (97), University Physics A II (100), University Physics Problem Solving II (100), Experiments in Physics II (100), Mathematics Experiment and Mathematical Modeling (96)

PUBLICATIONS & PATENTS

- **Dong, Y.**, Patil, S., van Arem, B., & Farah, H. (2022). A Hybrid Spatial-temporal Deep Learning Architecture for Lane Detection. *Computer-Aided Civil and Infrastructure Engineering*, 1– 20. https://doi.org/10.1111/mice.12829 **[Q1**, ***IF*:11.775, *SJR*:2.773]**

- **Dong, Y.**, Farah, H., & van Arem, B. (2022). Towards Developing Socially-Compliant Automated Vehicles: State of the Practice, Experts Expectations, and a Conceptual Framework (Accepted by the 4th Symposium on Management of Future Motorway and Urban Traffic Systems 2022 (MFTS2022), to be submitted to Journal of *Transport Reviews*).
- Li, R.[#], **Dong, Y.**[#,*]. Robust Lane Detection through Self Pre-training with Masked Sequential Autoencoders and Fine-tuning with Customized PolyLoss (Joint first author and corresponding author, Journal of *IEEE Transactions on Vehicular Technology*, ***Under Review***).
- Patil, S.[#], **Dong, Y.**[#,*], Farah, H, & Hellendoorn, J. Sequential Neural Network Model with Spatial-Temporal Attention Mechanism for Robust Lane Detection Using Multi Continuous Image Frames (Joint first author and corresponding author, ***Submitted*** to Journal of *Transportation Research Part C*: *Emerging Technologies*).
- Lingam, N., de Winter, J., **Dong, Y.**, Tsapi, A., van Arem, B., Farah, H. (2022). eHMI on the vehicle or just a traffic light? A driving simulator study (Journal of *Applied Ergonomics*, ***Under Review***). https://doi.org/10.13140/RG.2.2.12469.35042
- **Dong, Y.**[*], Chen, K., Peng, Y., Ma, Z. (2022). Comparative Study on Supervised versus Semi-supervised Machine Learning for Anomaly Detection of In-vehicle CAN Network. 2022 IEEE 25th International Conference on Intelligent Transportation Systems (ITSC), 2022, pp. 2914-2919 https://doi.org/10.1109/ITSC55140.2022.9922235
- Lu, X.[#], **Dong, Y.**[#,*], Li, R., Song, W. (2023). Intelligent Anomaly Detection for Lane Rendering Using Transformer with Self-Supervised Pre-Training and Customized Fine-Tuning (***Submitted*** to the Journal of Intelligent and Connected Vehicles, and the 23rd COTA International Conference of Transportation Professionals for presentation, CICTP 2023).
- **Dong, Y.**[#,*], Li, R.[#] Farah, H. (2023). Robust Lane Detection through Self Pre-training with Masked Sequential Autoencoders and Fine-tuning with Customized PolyLoss (**Accepted** by the Transportation Research Board (TRB) 102nd annual meeting TRB 2023).
- Zhang, Y., **Dong, Y.**[*], (2023). Optimization of coordinated flow restriction and skip-stopping schemes for urban rail stations considering platform carrying capacity (**Accepted** by the Transportation Research Board (TRB) 102nd annual meeting TRB 2023).
- **Dong, Y.**[#,*], Patil, S.[#], Farah, H, & Hellendoorn, J. (2023). Sequential Neural Network Model with Spatial-Temporal Attention Mechanism for Robust Lane Detection Using Multi Continuous Image Frames (**Accepted** by the Transportation Research Board (TRB) 102nd annual meeting TRB 2023).
- Liu, W., Zhang, X., **Dong, Y.**, Xu, L. (2022). A Unified Model Predictive Control Method of Automated Vehicles for Lane Changing and Lane Keeping Maneuvers (***Submitted*** to Journal of *Vehicle System Dynamics*)
- Farah, H., Postigo, I., Reddy, N., **Dong, Y.**, Rydergren, C., Raju, N. and Olstam, J. (2022). Aspects to Consider for Modeling Automated Driving in Microscopic Traffic Simulations: State of the Practice and Research Needs. *IEEE Transactions on Intelligent Transportation Systems*, 2022, https://doi.org/10.1109/TITS.2022.3200176
- Raju, N., Schakel, W., Reddy, N., **Dong, Y.**, Farah, H. (2022). Car-Following Properties of a Commercial Adaptive Cruise Control System- A Pilot Field Test. *Transportation Research Record: Journal of the Transportation Research Board*. https://doi.org/10.1177/03611981221077085
- van der Kooij, E., **Dong, Y.**, van Arem, B., Tsap, A., Farah, H. (2021). Assessment of Lane Detection Performance based on Different Lane Marking Properties under Optimal and Adverse Weather and Lighting (Work paper).
- **Dong, Y.**, Wang, Sh., Li, L., Zhang, Z. (2018). An Empirical Study on Travel Patterns of Internet Based Ride-Sharing, *Transportation Research Part C: Emerging Technologies* 86: 1-22. https://doi.org/10.1016/j.trc.2017.10.022
  [Highly cited; **Q1**, ***IF*:9.022, *SJR*:3.211]**

- **Dong, Y.**, Yang, Z., Yue, Y., Pei, X., & Zhang, Z. (2018). Revealing Travel Patterns of Sharing-bikes in a Spatial-temporal Manner using Non-negative Matrix Factorization Method. In *CICTP 2018: Intelligence, Connectivity, and Mobility* (pp. 1665-1674). Reston, VA: American Society of Civil Engineers. https://doi.org/10.1061/9780784481523.165
- Yue, Y., Pei, X., Yang, Z., **Dong, Y**., & Yao, D. (2018). A Trip Building and Chaining Methodology Using Traffic Surveillance Data. In *CICTP 2018: Intelligence, Connectivity, and Mobility* (pp. 2254-2262). Reston, VA: American Society of Civil Engineers. https://doi.org/10.1061/9780784481523.224
- **Dong, Y.**, Zhang, Z., Fu, R., Xie, N. (2016) Revealing New York Taxi Drivers' Operation Patterns Focusing on the Revenue Aspect. (2016) In *12th World Congress* on *Intelligent Control and Automation (WCICA)*, (pp. 1052-1057). IEEE. https://doi.org/10.1109/WCICA.2016.7578771
- **Dong, Y.**, Wang, Sh., Li, L., (2017) Uncovering Influence of On-Demand Ride Service on Emission Reduction and Energy Conservation through PHEM Model. [work paper].
- **Dong, Y.**, Ruan, H., Cai, T., Peng, J, and Wang ,W. (2013). Using LED to Demonstrate the Composition of Simple Harmonic Motions and Five Polarization States of Light. *Physics Experimentation* 11:45-48.
- The Age of Smart Integrated Transportation: **Huawei**'s Practice in the Digital Transformation of Transportation Industry [M]. *Publishing House of Electronics Industry*. [Involved as Reviewer, and Expert Editor for Preface, Chapter 1 & 13]
- ***Chinese Invention Patent:*** Intelligent Demonstration Instrument of Simple Harmonic Oscillation Composition and Five Polarization States of Light, Application ID: 201310123700.5, Date: 2013.08.07, Publication Patent Number CN103236211B, Publication Patent Date: 2016.07.06
- ***European Patent:*** Robust lane detection method through self pre-training with masked sequential auto-encoders and fine-tuning with customised PolyLoss (IDF OCT-22-060, to be submitted)

RESEARCH EXPERIENCE

1. Traffic and Transportation Safety Lab | Department of Transport and Planning **| TU Delft** Dec.2019-Present

- **Data-driven research for expanding Automated Vehicles' Operational Design Domain in mixed traffic (**part of SAMEN project**)**
  - Developed a hybrid sequence-to-one model for lane detection in extremely-hard driving scenes
  - Incorporated spatio-temporal attention for automated vehicles' perception
  - Reliable data-driven algorithms are being developed for peculiarities identification, recognition, and prediction
  - State-of-the-art Deep Reinforcement Learning (DRL) models are being explored to develop reliable models for AVs' driving policies under selected manoeuvres involving both longitudinal and lateral control
  - ***Research outputs:***
    - A Hybrid Spatial-temporal Deep Learning Architecture for Lane Detection (Published on *CACIE*)
    - Aspects to Consider for Modeling Automated Driving in Microscopic Traffic Simulations: State of the Practice and Research Needs. (Published on *IEEE Transactions on ITS*)
    - Car-Following Properties of a Commercial Adaptive Cruise Control System- A Pilot Field Test. (Published on *Transportation Research Record: Journal of the Transportation Research Board*)
    - Robust Lane Detection through Self Pre-training with Masked Sequential Autoencoders and Fine-tuning with

Customized PolyLoss (Under review by *IEEE Transactions on ITS*, Accepted by TRB 2023)

- Sequential Neural Network Model with Spatial-Temporal Attention Mechanism for Robust Lane Detection Using Multi Continuous Image Frames (Under review, Accepted by TRB 2023)
- Towards Developing Socially-Compliant Automated Vehicles: State of the Practice, Experts Expectations, and a Conceptual Framework (Accepted by MFTS 2022, to be submitted to Journal of Transport Reviews)
- Intelligent Anomaly Detection for Lane Rendering Using Transformer with Self-Supervised Pre-Training and Customized Fine-Tuning (Submitted to the *Journal of Intelligent and Connected Vehicles*, and CICTP 2023).
- Robust Lane Detection using Image Sequential Attention Based Transformer Model with Elaborated Positional Encoding (In preparation)
- Safe, Efficient, and Social Compliant Autonomous Driving based on Deep Reinforcement Learning (In preparation)
- European Patent: Robust lane detection method through self pre-training with masked sequential auto-encoders and fine-tuning with customised PolyLoss (IDF OCT-22-060, to be submitted)

May.2018-Sep.2019

2. **Waterloo Artificial Intelligence Institute |** Faculty of Engineering **| University of Waterloo**

Applied Machine Learning, Artificial Intelligence, and Big Data Research

- The 2018 Railroad Problem Solving Contest: Use CNN-LSTM-Dense Concatenated model to forecast train delays
- A Deep Learning Framework for Traffic Forecasting: Exploring GCN joint with LSTM to predict traffic flow
- Data-driven anomaly/fraud detection (Unsupervised): Auto-Encoder, Hierarchical Extreme Learning Machines
- Kaggle Competition: Employ LSTM, LightGBM and XGBoost models to predict stock movements with news data
- Deep reinforcement learning in traffic control: DQN, A3C, and PPO methods
- Real-time Road Surface Condition Monitoring: Adopt Convolutional Neural Network to RSC image classification
- Optimized dynamic dispatching and operation algorithm for on-demand shared mobility by deep learning

Aug.2016-Sep.2016

3. **Singapore-MIT Alliance for Research and Technology (SMART)**

Future Urban Mobility (FM) IRG | Project: *SimMobility* | Topic: Taxi Roaming

Advisor: Professor Moshe BEN-AKIVA, Postdoctoral Associate Bat-hen NAHMIAS-BIRAN

Constructing model tackling taxi roaming (taxi service) problem, to be embedded into *SimMobility* platform

- Proposed one advisable solution of cruising along hotspots through a cell-based logit-opportunity model improved by data-driven method
- Participated in building the architecture of the final model embedded in *SimMobility*

Sep.2014-May.2018

4. **Intelligent Transportation Laboratory, Tsinghua National Laboratory for Information Science and Technology (TNList) | Advisor:** Professor Zuo Zhang and Li Li (*IEEE Fellow*)

Transportation Research based on machine learning and data-driven methods

Revealing New York taxi drivers' operation patterns focusing on revenue

- Developed a method for classifying drivers into 3 groups based on their revenue: top, ordinary, low earner
- Excavated the population operation patterns of different taxi driver groups through big data analytics

Influence of on-demand ridesourcing versus traditional taxi based on machine learning and big data analytics

- Uncovered the differences between taxi service and ridesourcing using big data analyzing and clustering methods

- Applied non-negative matrix factorization (NMF) to obtain basis patterns of Taxi, Hitch and Express service

- **Influence of on-demand ridesourcing on vehicle emissions**
  - Applied big data analytics and *PHEM* model to demonstrate how ridesourcing reduced total vehicle emissions
- **Fundamental research on intelligent parking guidance and recommendations based on machine learning**
  - Forecast models of travel time to parking lots (*Random Forest*); Guidance and optimization models for parking
  - Personalized recommendation research on parking (Collaborative Filtering and Content-based algorithm)
- **Study on key technology in Intelligent Vehicle Infrastructure Cooperative Systems (**IVICS**) (*863* Program)**
  - Contributed to the design report of basic technical framework and the overall demonstration of IVICS in China

5. Design of vehicle-mounted data acquisition and communication unit for the WMN-based locomotive remote control system Jun.2013-Jun.2014

- Designed basic hardware circuits, software, and algorithms to accomplish analog and digital signal acquisition
- Applied PID control algorithm to control the locomotive's movement
- Commissioned and implemented the CAN bus protocol and Wireless Mesh Network communication

6. The Freescale Cup College Students Intelligent Car Race: Intelligent car that can follow specific trajectories based on image acquisition and processing, pattern recognition, and PID controller Jun.2012-Jun.2013

- **Hardware Aspect:** Designed the signal acquisition circuit as well as the core control circuit based on MC9S12XS256
- **Software Aspect:** Designed a specific control strategy and algorithm for the intelligent car to follow a given trajectory
- **Actuator:** Designed specific steering linkage and applied two different PID algorithms to control diversion and speed

7. National Innovation Project for College Student: Design of a system to demonstrate the composition of the simple harmonic motions and five polarization states of light by using LEDs May.2012- May.2013

- Designed a system, including the circuits hardware (*Altium Designer*) and control software (*C*), for the demonstration
- Participated in the "Challenge Cup" Entrepreneurship Design Contest in Beijing and won the Bronze award

HONORS & AWARDS

Erasmus + mobility Grants (Twice) **National Scholarship (Top 1%)** **Excellent League member**

IEEE ITSS Young Professionals Travelling Fellowship **Second-Class Merit Scholarship for Masters Tsinghua University**

Outstanding College Graduates of Beijing (Top 1‰) **First-Class Academic Fellowship (Top 1%, Twice)**

First Class Tsinghua University RONG Scholarship **Second-Class Academic Fellowship (Top 3%, Once)**

School-level Merit Student (Four times) **Second prize of Innovation Awards by School of Science**

- **Selected Contest Awards (More than 10 awards are provincial level or above)**

Honourable Mention in 2013 Interdisciplinary Contest in Modeling

Second Prize in the 2013 Undergraduate Electronic Design Contest in Beijing

Second Prize in the 2012 Undergraduate Electronic Design Contest in Beijing

Second Prize in the Physical Experiment Competition in Beijing

Bronze award in "Challenge Cup" Entrepreneurship Design Contest in Beijing

First Prize in Beijing Jiaotong University "Challenge Cup" Entrepreneurship Design Contest

First Prize in Freescale Cup University Students Intelligent Car Race (Rank No.2)

2019 Microsoft Discover AI Challenge: *Sustainable Life* Top 10%

THESIS SUPERVISION

Lanxin Zhang | Master of Science in Civil Engineering–Transport and Planning Oct.2022- *Ongoing*

Thesis title: Semi-supervised Machine Learning for Abnormal Driving Behaviour Detection

Henan Yuan | Bachelor in Traffic and Transportation, BJTU&TUDelft TTE Oct.2022- *Ongoing*

Thesis title: Deep Reinforcement Learning for Driving through Roundabouts

Mathijs den Otter | Master of Science in Civil Engineering–Transport and Planning Sep.2022- *Ongoing*

Thesis title: Effects of improved lane markings on Lane Keeping Assistance systems and human detection

Shiva Nischal Lingam | Master of Science in Civil Engineering–Transport and Planning Jan.2021-Nov.2021

Thesis title: Effects of External Human Machine Interfaces on Automated Vehicles' Communicative Interactions With Human Drivers (Grade: 8.5/10) | Won 2nd Cuperusprijs prieze of KIVI

Sandeep Patil | Master of Science in Mechanical Engineering (Vehicular Engineering) Oct.2020-Aug.2021

Thesis title: Lane Detection using SpatioTemporal Attention (Grade: 7.0/10)

Eline van der Kooij | Master of Science in Transport, Infrastructure & Logistics Jul.2020-May.2021

Thesis title: Lane Detection using SpatioTemporal Attention (Grade: 8.0/10)

Sanny Toonen | Bachelor of Science in Civil Engineering–Transport and Planning Jul.2020-May.2021

Thesis title: Lane recognition for automated vehicles (Grade: 7.5/10)

TALKS & PRESENTATIONS

AI Applications in Transportation Planning | TRB 2023, Washington D.C., USA Jan.11.2023

Presentation topic: (1) Robust Lane Detection through Self Pre-training with Masked Sequential Autoencoders and Fine-tuning with Customized PolyLoss
(2) Sequential Neural Network Model with Spatial-Temporal Attention Mechanism for Robust Lane Detection Using Multi Continuous Image Frames

Research into Urban Rail Transit Operations and Design | TRB 2023, Washington D.C., USA Jan.11.2023

Presentation topic: Optimization of coordinated flow restriction and skip-stopping schemes for urban rail stations considering platform carrying capacity

Connected and Automated Vehicles | MFTS 2022, Dresden, Germany Dec.01.2022

Presentation topic: Towards Developing Socially-Compliant Automated Vehicles: State of the Practice, Experts Expectations, and a Conceptual Framework

Automated mobility | IEEE ITSS Young Professionals Fellowship Symposium, Chania, Grecee Nov.25.2022

Presentation topic: Multi-goal proactive traffic management for mixed traffic of automated vehicles (AVs) and human-driven vehicles (HDVs) using explainable physics-informed Artificial Intelligence

AI, Security, Privacy and Safety Systems in ITS Applications| ITSC2022, Macow, China Oct.08.2022

Presentation topic: Comparative Study on Supervised *vs* Semi-supervised ML for Anomaly Detection of CAN Network

Research on AI and Advancing Computing Applications | TRB 2022, Washington D.C., USA Jan.12.2022

Presentation topic: A Hybrid Spatial-temporal Sequence-to-one Neural Network Model for Lane Detection

Challenges of Automated Vehicles and Traffic | University of Győr, Hungary May.28.2021

Talk topic: Deep learning for automated vehicles' operational design domain: problems, challenges, and case studies

SAMEN User Committee Annual Meeting | Dutch Research Council (NWO), Delft, Netherlands Jan.28.2021

Talk topic: Data-driven research for automated vehicles' operational design domain: case study on perception

Intelligence, Connectivity, and Mobility | COTA CICTP 2018, Tsinghua University, China Jul.07.2018

Presentation topic: Revealing travel patterns of sharing-bikes in a spatial-temporal manner using the NFM method

World Congress on Intelligent Control and Automation | IEEE WCICA 2016, Guilin, China Jun.12.2016

Presentation topic: Revealing New York Taxi Drivers' Operation Patterns Focusing on the Revenue Aspect

TEACHING ACTIVITIES

Project supervisor, Instructor | EEMCS, TU Delft Nov.2022-Apr.2023

Course: Capstone Applied AI Project 2022-2023 T13150TU

Taching Assistant, Instructor | TU Delft and BJTU joint bachelor program Mar.2022

Course: Advanced Lecture "Trends in Transportation" 2022

Lecturer | DakeOffer online Platform Mar.2020-Jun.2020 & Nov.2020-Jan.2021

Course: Introduction to Big Data and Artificial Intelligence: Fundamental and Practice

Teaching Assistant | Transport and Planning, TU Delft Apr.2020-Aug.2020 & Apr.2021-Aug.2021

Course: CIE5805 – Intelligent Vehicles for Safe and Efficient Traffic

Teaching Assistant | Department of Automation, Tsinghua University Sep.2016-Jan.2017

Course: Data Ethics

Teaching and Lab Assistant | Electrical and Electronic Lab Center, Tsinghua University Mar.2016-Jul.2016

Course: Advanced Labs in Electronic Technology

Teaching and Lab Assistant | Electrical and Electronic Lab Center, Tsinghua University Mar.2015-Jul.2015

Course: Fundamentals of Electronics Power Technology

RSI Tutor | Center for Excellence in Education, USA Jul.2017-Aug.2017

Research writing and presentation tutor for 2017 Research Science InstituteProgram at Tsinghua University

Undergraduate Counselor (Class 2012) | School of EIE, Beijing Jiaotong University Jul.2012- Jul.2014

PROFESSIONAL SERVICES & EXPERIENCE

Workshop Organizer | IEEE Intelligent Vehicles Symposium (IV 2023), Anchorage, USA Jun.04.2023

Workshop title: Development of socially-compliant driving behaviour for automated vehicles to enhance safety and efficiency in mixed trafficvehicles symposium

Ad-hoc Reviewer Services

Journals

- IEEE Transactions on Intelligent Transportation Systems
- Journal of Advanced Transportation
- IEEE Open Journal of Intelligent Transportation Systems
- Transportation Letters: the International Journal of Transportation Research
- Journal of Transportation Research Record: Journal of the Transportation Research Board

Conferences and Proceedings

- IEEE Intelligent Transportation Systems Conference (ITSC)
- Transportation Research Board (TRB) Annual Meeting
- World Congress on Intelligent Control and Automation (WCICA)
- COTA International Conference of Transportation Professionals

Research Assistant | Transport Big Data Analytics | **ITS Lab, TNList@Tsinghua University** Aug.2017- May.2018

- Cross-domain data fusion for full-time trip chain reconstruction and anomalies detection;
- City Computing: Applying NMF methods to evaluate indicators describing urban function, land use, mobility, etc.
- Revealing collective travel patterns of *Shared Mobility* in a spatial-temporal manner

Carryout service data analysis Project Manager | Beijing Gooagoo Technical Service Co., Ltd. Jul.2016-Aug.2016

- Integral process of Big Data Analytics: Crawled carryout service data using Python crawler; executed data storage, data analysis, and data processing in relational database (MySQL); visualization, clustering and application (web)

System architect for control of shuttle machine | Beijing IBOSST for Logistics Co., Ltd. May.2016-Aug.2017

Data Analyst | Beijing Municipal Commission of Transport: TOCC Jun.2016- Jul.2016

Data Analysis Engineer | DiDi Chuxing Company May.2016-Jun.2016

- Determined the approximate trajectory of ride-sharing by transfer learning from private car trajectories
- Calculated the daily total vehicle emissions reductions by using the PHEM model

Commentator | China International Congress on Intelligent & Connected Vehicles (CICV) Oct.2015-Oct.2015

- Introduced the i-VICS systems to audiences; received executives from automobile manufacturers BMW, Volvo, VW

Test Engineer Assistant | China Unicom southern district IPv6 renovation project, MIIT CTTL Nov.2013-Dec.2013

- Tested all kinds of typical applications on the Internet under the IPv6 environment

Research Intern | Broadband Network & Digital Media: Qionghai Dai's Lab, Tsinghua University Jul.2013-Aug.2013

- Review of technical investigation for controlling waves in space and time for imaging and focusing,in complex media

LEADERSHIP & VOLUNTEER EXPERIENCE

Project Leader | Asian Youth Center: Leadership Development Training Program for Masters Jul.2015-Aug.2016

- Responsible for activities and competitions between overseas and Chinese students in the Asian Youth Center project
- **Volunteer Leader** in the 5th Joint School Symposium for the Asian Youth Center Project

iTalk Group Leader | International Department, Tsinghua University Postgraduate Association Oct.2014-Oct .2015

- Committed to speech in English given by students or alumni star, held a special performance for overseas students

Volunteer | National Doctor Forum on Traffic and Transportation Engineering, Beijing Jiaotong University Jun.2011

SKILLS & MISCELLANEOUS

- Programming Languages: Python (Tensorflow, Pytorch, Keras), Matlab, R, C/C++, Java &VHDL | Database: MySQL
- Hardware circuit design: Altium Designer
- Proficient in software development on Linux and Windows
- Big data analytics and visualization methods | Cross-domain Data Fusion | Data-driven anomaly/fraud detection
- Hobbies: **Tai Chi, Meditation, Kung Fu**, Chess, Yoga, Reading, Mountain climbing, Skiing