ZEREN TAN

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EDUCATION

Tsinghua University Aug. 2016 - Present
B.S. in Civil Engineering
Minor in Mathematics

COURSES

- **Major**:
  Calculus A (1): A+ (100), Calculus A (2): A+ (100), Linear Algebra: A- (90+), Probability and Statistics: A (95+), Physics for Scientists and Engineers: A, Structural Mechanics: A, Fundamental of Elasticity and Finite Element Method: A, Operations Research: A, Undergraduate Research Plan: A
- **Minor**: Ordinary Differential Equation and Dynamic Systems, Abstract Algebra, Differential Geometry, Real Analysis, Network Optimization, Modern Optimization Algorithms, Complex Analysis
- **Coursera**: Series courses of deeplearning.ai; Divide and Conquer, Sorting and Searching, and Randomized Algorithms; Graph Search, Shortest Paths, and Data Structures

RESEARCH EXPERIENCE

Tsinghua University Jan. 2019 - Present
Minimum Automobile needed in Future Cities *Professor Ruimin Li*

· We are going to address the problem of how many automobiles an urban city need in the future to serve all trip requests.

Purdue University Aug. 2018 - Sep. 2018
Efficient Algorithms Design for Dynamic Ride-sharing System *Professor Satish Ukkusuri*

· We proposed a polynomial graph-based algorithm that can be used in cases where optimal solution is not required.
· We propsed an exact algorithm for dynamic ride-sharing problems including requests integrating and trip-vehicle matching and computed its running time which is $O(1.2312^{|\mathcal{E}|})$, where $\mathcal{E}$ is the number of edges in the graph.

Tsinghua University Mar. 2018 - Present
Traffic Incidents Duration Prediction Based On Deep Survival Analysis *Professor Ruimin Li*

· We introduced a deep learning model called Deep Survival into traiffc incidents duration prediction.
· Our results showed that deep survival analysis model is well-suited in predicting traffic incidents duration and outperforms some state-of-the-art models.
· Second-authored paper is being written.

Tsinghua University Dec. 2017 - Present
A Dynamic Model for Traffic Flow Prediction Using Updated DRN *Professor Ruimin Li*

· We proposed an updated DRN model based on original DRN.

· Our results on 14 traffic flow detectors showed that our model outperforms LSTM and DRN.
· First-authored paper is going to be submitted.

FELLOWSHIP

- Tsinghua Spark Talent Program Fellowship (since 2018)
  - 46/3600, prestigious college innovation society
  - The only one selected from the Department of Civil Engineering (110 students)

SCHOLARSHIPS & AWARDS

- Award for Excellence in Comprehensive Performance, 2018
- Award for Excellence in Scientific and Technological Innovations, 2018
- National Encouragment Scholarship, 2018
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- 1st prize in Chinese Undergraduate National Mathematics Competition, 2017
- Meritorious Winner in Interdisciplinary Contest In Modeling, 2018
- 1st place in Tsinghua Undergraduate Mathematics Competition (Group of Calculus), 2017
- 2nd prize in Tsinghua Mathematical Modeling Contest, 2018

TECHNICAL SKILLS

Computer Languages	Python, Java, MATLAB, C/C++
Tools	LaTeX, Git, Linux, Keras