

## SHIYUAN WANG

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Email: shiyuan8@illinois.edu

### SCHOOL EDUCATION

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University of Illinois at Urbana-Champaign **08/2018—12/2020**

**GPA: 3.87/4.0**

Zhixin High School

Chang'an University, Xi'an, Shaanxi, China **09/2015—07/2019**

Major: Transportation Engineering (Bilingual Program)

Degree: Bachelor of Engineering

**GPA: 3.9/4.0**

### PROJECT EXPERIENCE

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**1. Research Assistant in Railtec at UIUC: *Scheduling and routing of roaming conductors of American railways*** **2020**

**Objectives:** Develop the VRP model in this particular situation; Test the feasibility and efficiency of previous scheduling and routing solutions based on heuristics.

**2. Research Assistant in Environment at UIUC: *(with Prof. Tessum)*** **2020**

**Skills learned/applied:** Retrieve, manipulate, and analyze spatial data (both in raster and vector format); Understand and calculate the Input-Output Tables.

**3. Independent Study at UIUC: *(with Prof. Ouyang) Reliable Facility Location Model Exploration*** **2020**

**Activities:** Read assigned journal articles, have bi-weekly meetings with the instructor, and prepare a final report on the research efforts/progress during the semester.

**Objectives:** 1. learning the latest literature on reliable facility location design against probabilistic disruptions. 2. exploring potential research topics in this direction based on those articles.

**4. REU Experience at UIUC: *(with Prof. Benekahal) Evaluation of Intersection Performance under Adaptive Signal Control*** **2019**

**Duties:** 1. Data reduction, such as observing the number of vehicles in a cycle, the green time allocation, traffic conditions, and calculating offsets. 2. Basic and simple data analysis.

**Objectives:** 1. Analyze the traffic performance on side street to see whether SynchroGreen can handle side street traffic at the same time when it is optimizing the mainline traffic. 2. Analyze the offsets between two consecutive intersections of AM peak, noon peak and PM peak, to see whether SynchroGreen is calculating and executing reasonable offsets to carry out good coordination.

**Skills learned/applied:** Data reduction and analysis; R programming.

**5. Course Project (CEE512 at UIUC): *Food Delivery Service*** **2019**

**Objectives:** Model food delivery problem as a dynamic vehicle routing problem with time window. In the long run, we group the new orders in the previous time interval as

the input, as well as keeping track of the positions of all the drivers, and record all unfinished orders assigned to each driver. Based on the information we collected, we could come up with the optimal routing for each driver.

**6. Course Project (IS457 at UIUC): *Analysis of Sydney Airbnb Dataset Following Lifecycle of Data Science* 2019**

**Objectives:** 1. Data Processing. 2. Data Analysis. 3. Conduct in-depth analysis for business insight.

**Skills learned/applied:** R programming; Lifecycle of Data Science.

**7. Course Project (CEE418 at UIUC): *Tianjin Eco-City Public Transit Design* 2019**

**Main design:** 1. Transit system design: light rail routes, stations and headways; bus schedule and fleet operations. 2. Supplementary system design: Ridesharing and bike sharing and corresponding re-balancing issue.

**Skills learned/applied:** Mathematical programming; Python; Apply theoretical design to practice.

**8. Course Project (UP418 at UIUC): *Crime Change Detection and Crime Analysis in San Francisco* 2018**

**Objectives:** 1. Track the change of crime distribution. 2. Analyze crime influence factors. 3. Suggest optimal location for new police stations.

**Skills learned/applied:** ArcGIS; Data collection and reduction.

**9. Course Design: Traffic Design 2018**

Mastered the software VISSIM; Construct an intersection and simulate the traffic patterns to see how the delay, travel time and etc. vary according to different road layout and traffic parameters.

**10. Course Design: Highway Reconnaissance Survey & Design 2018**

Mastered the software HintCAD; designed the horizontal, vertical and cross-sectional alignment of a highway.

**11. Project Name: *Distributed Trip Behavior Identification System* Challenge Cup Undergraduate Curricular Science and Technology Competition 2016-2017**

**Numbers of participant:** 7

**Duties:** Responsible for data processing and paper writing.

**Target and achievement of project:** Developed a traffic identification system based on Wi-Fi positioning technology.

**Research methods and techniques involved:** Wi-Fi positioning technology, triangulation algorithm, embedded algorithm.

**Significance of research:** Compared with other similar monitoring devices, this system has large amount of monitoring data and high accuracy, low cost and is easy to promote, it has wide range of applications and can be applied in traffic behavior detection and

other precise positioning fields.

## **12. Surveying Practice at Taibai Campus**

**11/2016**

Undertook the tasks as a team leader; skillfully mastered instruments of surveying and mapping, such as Total station, Theodolite; learnt to survey and map with the aid of GPS; procced the data collected with computer; graphed the topographic map with CASS(AutoCAD).

## **INTERNSHIP EXPERIENCE**

### **Intern in Guangdong Province Communications Planning & Design Institute Co.,Ltd**

**08/2017**

Learned simple cases of bridge and road design, and the procedures and division of work of road and bridge design; investigated two construction sites on the spot; mastered the software HintCAD well and design roads and highways with aid of it.

## **AWARDS AND HONORS**

- **“National Scholarship” by the Ministry of Education of China** **2016**
- **“National Scholarship” by the Ministry of Education of China** **2017**
- **Honor of Outstanding Graduate of Chang’an University** **2019**
- **Second Prize in Distributed Trip Behavior Identification System Challenge Cup Undergraduate Curricular Science and Technology Competition of Shaanxi Province** **2017**
- **Special Price in National English Competition for College Students** **2016**
- **Special Price in National English Competition for College Students** **2017**

## **SKILLS**

1. **Python**
2. **R Programming**
3. **ArcGIS**
4. **AutoCAD & HintCAD**
5. **MATLAB**
6. **VISSIM**
7. **TransCAD**
8. **HCS**