

# Shirui Chen

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## Education

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### **University of Wisconsin, Madison, Bachelor of Science Candidate, November 2020**

- Computer sciences major & math major
- Dean's list; GPA 4.0; Credits: 75

## Research Experience

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### **Undergraduate Researcher**

**Prof. Vikas Singh, UW Madison**

**Madison, Wisconsin**

**July 2018- present**

- Design novel neural network structure that effectively learn medical image feature under Riemannian geometry
- Provide a better understanding of medical images for brain and cancer research

### **Computational Biology Researcher**

**Prof. Hong Li, Shanghai Institutes for Biological Sciences**

**Shanghai, China**

**June 2016 - July 2017**

- Published a journal article on *BioMed International*
- Wrote R script to explore the differences between gene expression datasets from different patient groups
- Used statistical methods like multivariate analysis of variance (ANOVA) to evaluate the impact of different factor

### **Urban Traffic Modeling**

#### **Personal Research Project**

**Shanghai, China**

**January 2017 - June 2017**

- Modeled urban traffic using mixture of multivariate gaussian model and automata theory
- Explored agent-based programming language like NetLogo
- Used Gibbs sampling to generate data from mixture of distribution

## Competitions and Awards

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### **ACM International Collegiate Programming Contest (ICPC)**

**Verona, Wisconsin**

**November 2018**

- World Finalist of 43rd Annual World Finals
- Wrote C++ program to solve algorithmic problem related to dynamic programming, number theory, graph theory and computational geometry, etc

### **Mathematical Contest in Modeling (MCM) (March 2018)**

**Madison, Wisconsin**

**March 2018**

- Meritorious Winner (Top 10% out of 10670 teams)
- Developed combined model of multivariate linear regression and differential equation model to assess and predict the usage of renewable energy
- Wrote R script to clean data and implement the model.

### **Brain Bee China National Neuroscience Championship (May 2017)**

**Shanghai, China**

**May 2017**

- First Prize winner (Ranked 4th among all the participants)

## Skills

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**Technical Skills** R, Java, C++, Python, Linux, LaTex, MySQL

**Web & Design** Adobe Photoshop, Adobe Illustrator