

# Shuze Liu

123 York St, 19D, New Haven, CT 06511  
(518)360-5086 | shuzeliu97@gmail.com | <https://shuzeliu.com>

## Education

---

### Yale University

*Aug. 2019 – May 2020*

M.S. , Computer Science

### Rensselaer Polytechnic Institute (RPI)

*Aug. 2017 – May 2019*

B.S. , Computer Science

Cumulative GPA: **4.0/4.0** (Summa Cum Laude)

### Southwest Jiaotong University

*Aug. 2015 – Aug. 2017*

B.E. , Electronic Information (Transferred to RPI)

Cumulative GPA: 90.85/100 3.87/4.0 in WES

## Advanced Courses & Teaching

---

**AI & Theory Courses:** Intro. to Artificial Intelligence, Computability and Logic, Graph Theory, Advanced Computer Algorithms, Deep Learning, Computational Intelligence for Games.

**Programming Courses:** Operating Systems, Programming Languages, Database Systems, Software Engineering, Software Development & Documentation, Compiler Principles, Object-Oriented Programming.

**Course Mentor at RPI:** Intro. to Algorithms (Spring 2019), Intro. to Logic (Fall 2018).

## Experience

---

### Alibaba Group, DAMO Academy

*June 2019 – Aug. 2019*

#### Algorithm Engineer Intern

*Hangzhou, China*

- Developed a program in Python to test the actual performance of twelve convolutional neural networks on the server.
- Implemented ShuffleNet v2 by MxNet in Python. Trained this neural network on clothing pictures.
- Achieved 91.8 % accuracy on clothing classification problem by tuning the hyperparameters.
- Developed an API for this network to allow the City Brain project to input any size of pictures and get their labels.

### Strengthening Blockchain Code to Handle Unexpected Situations

*May 2018 – May 2019*

#### Undergraduate Researcher

*Troy, New York*

- Developed a decentralized course selection system on the blockchain platform, Hyperledger Composer in Javascript.
- Designed a voting mechanism with an action list to handle unexpected situations in blockchain code.
- Applied Peer Prediction algorithm to reward peers and motivate them to report their true thoughts.
- Augmented this mechanism with generic principles. Created generic APIs for incoming blockchain code.
- Enhanced this mechanism using machine learning to predict peers' preferences.

## Publication

---

- **Shuze Liu**, Farhad Mohsin, Oshani Seneviratne, Lirong Xia. Strengthening Smart Contracts to Handle Unexpected Situations. **Published on IEEE International Conference on Decentralized Applications and Infrastructures.** [\[Link\]](#) [\[PDF\]](#)

## Selected Projects

---

### Computational Intelligence for Games

*Aug. 2019 – Dec. 2019*

- Implemented an optimal player for finite, impartial, normal combinatorial games based on Sprague-Grundy Theorem.
- Used a linear programming solver to find equilibrium for simultaneous games.
- Implemented Monte Carlo Tree Search with enhancements to compute the optimal strategy for Kalah game.
- Created an artificial neural network architecture and trained it for playing solitaire Yahtzee.

### Artificial Intelligence in Pac-Man

*Jan. 2019 – May 2019*

- Developed informed search algorithms to help Pac-man find food dots. Designed heuristics to increase efficiency.
- Abstracted game states in multi-agent Pac-Man games. Implemented Bayesian Networks to infer agents' positions.
- Developed q-learning, a reinforcement algorithm to learn the optimal strategy for Pac-Man.

## Skills

---

- Programming Languages: Python, C/C++, Java, Javascript, SQL, Pascal, Prolog, Scheme.
- Tools: TensorFlow, MxNet, Pytorch, Hyperledger Composer, LaTeX, Hugo.