

# Shichu (Stuart) Zhu

☎ +1 (217) 607-6968 • ✉ shichuzhu@gmail.com  
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**Objective:** Software development engineer internship position, Summer 2019.

## Education

- **University of Illinois at Urbana-Champaign** **Urbana, IL, US**  
Computer Science, Professional MS August 2018–Expected December 2019
- **University of Illinois at Urbana-Champaign** **Urbana, IL, US**  
Atmospheric Science, MS August 2014–August 2018
- **Peking University** **Beijing, China**  
Atmospheric and Oceanic Sciences, BS September 2010–July 2014  
School of Physics, G.P.A. Major 3.70/4.0, Overall 3.52/4.0

## Experience

- **University of Illinois** **Urbana, IL, USA**  
Teaching Assistant, Dept of Computer Science, CS 411 Database Systems. August 2018–Present  
Design homework questions (SQL query, ER diagrams), present tutorial lecture on web programming with DBMS.
- **Full-Stack Software Developer, DataSpread Group: [dataspread.github.io](https://dataspread.github.io), Prof. Aditya Parameswaran** Summer 2018  
Mainly developed in java/javascript with the Spring framework; Designed and developed the navigation browsing component, integrating front-end design and back-end database algorithm support; Achievements included augmenting ZK–SpreadSheet's formula execution engine and using complex data structures such as B-Tree.
- **Research Assistant, Dept of Atmospheric Science, Prof. Greg McFarquhar** 2014–2017
  - NSF-funded research project to understand formation of ice clouds based on observed ice particle images.
  - Used MATLAB programs to process the particle images, extract dimensional information and estimate their size distributions.
  - Statistically analyzed and visualized the distributions and their derived properties to draw scientific conclusions. The analysis was largely done in Python (Scipy/Pandas/Matplotlib). Sample jupyter notebooks available at [github.com/shichuzhu/atmos-research](https://github.com/shichuzhu/atmos-research).
  - Results presented at American Geophysical Union Fall Meeting in Dec 2016.
- **California Institute of Technology** **Pasadena, CA, USA**  
Visiting Undergraduate Researcher, Dept of Planetary Science Summer 2013  
Numerical simulation of the weather layer of Jupiter's atmosphere using GFDL's shallow water model. Original model and tuning are coded in FORTRAN.
- **Peking University** **Beijing, China**  
Undergraduate Researcher, Dept of Atmospheric and Oceanic Sciences 2013–2014  
A survey and comparison of existing numerical advection schemes in solving 1-D advection equation. Implemented in FORTRAN.

## Projects

- **Course project, Distributed Systems, [gitlab-beta.engr.illinois.edu/szhu28/ShichuCS425MP](https://gitlab-beta.engr.illinois.edu/szhu28/ShichuCS425MP)** Fall 2017  
Implemented a gossip-style failure detector for a distributed system connected by arbitrary network topology. Programming techniques included building a utility RPC module with socket and decorator in Python.
- **Course project, Data Structures Honor Section, [github.com/shichuzhu/text\\_adventure\\_game](https://github.com/shichuzhu/text_adventure_game)** Fall 2017  
A simple terminal text adventure game built under functional programming paradigm in Clojure.

## Courses

- **Taken:** Algorithms and Data Structures, Applied Numerical Methods [A+], Calculus, Introduction to Computation [A+], Linear Algebra, Probability and Statistics.
- **Audited:** Algorithms, Applied Cloud Computing (Python), Communication Networks (C++), Database Systems, Distributed Systems (Python, Go), Programming Languages (Haskell), System Programming (C).

## Programming Skills

- **Proficient in:** C++, Java, Python.
- **Familiar with:** C, Clojure, FORTRAN, Go, Haskell, MATLAB, SQL,  $\LaTeX$ , javascript.
- **Frameworks & Tools:** React, gRPC, Django, Jupyter notebook, Node.js, Spring.
- **Programming Contests:** Illinois Programming League (IPL) Rank 5 (Season 3), Rank 9 (Season 2).