

## Education

Master of Science in  
Computer Science,  
2013-2015  
Worcester Polytechnic  
Institute, US

Bachelor in  
Computer Science,  
2008-2012  
Tianjin University of  
Technology, China

## Skill highlights

### Programming

#### Languages:

C++

Python

JAVA

#### System and

#### frameworks:

AWS

Linux

Spark

#### Computation

#### packages:

CPLEX

CUDA

#### Database:

NoSQL

MySQL

etc.

## Address

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# ChaoLi

## Software Engineer

## Projects

### Network protocol simulation and application

02/14 - 05/14

*Computer networks course project*

- Implemented a server and a client of a chat app, based on Linux sockets;
- Simulated the *selective repeat* and *go back n* algorithms of TCP protocol;
- This program is multithread, which can handle multiple clients at the same time.

### Study on the Object Tracking in Video Stream

09/10 - 10/11

*College student innovation project*

- Studied Meanshift algorithm and Particle Filter algorithm;
- Implemented both of the above two algorithms in C++ and OpenCV;
- Blended the two algorithms.

## Research experience

### Semidefinite Programming, Binary Codes and a Graph Coloring Problem

09/14 - 05/15

*Master's thesis project Advised by Prof. Martin, William J*

- Studied *Semidefinite Programming* (SDP), and CVX used to model and solve SDPs;
- Studied the binary code size bound formulation based on SDP;
- Wrote a C++ program used to generate the dual-SDP problems automatically.

### Recovering All Statistically Significant OPSM Patterns

06/14 - 02/15

*Advised by Prof. Trapp, Andrew*

- Studied the Order-Preserved Submatrix (OPSM) problem;
- Used C++ and CPLEX Concert technology to formulate its complementary problem;
- Added constraints to recover all statistically significant OPSMs.

### Study on the Combinatorics of Binary Serial Parallel Graph

06/14 - 12/14

*Advised by Prof. Hofri, Micha*

- Used the *Symbolic method* in *Analytic Combinatorics* to model random structures;
- Used the *Transfer Theorem* in *Analytic Combinatorics* to obtain the analytical generating functions for the structure;
- Studied on the generating function for its properties, e.g., size and order.

### Internship

04/13 - 05/13

*Tellyes Company, Research Engineer, Tianjin, China*

- Learned the convolutional based ultrasound image simulation algorithm;
- Rewrote the algorithm from C++ into CUDA C giving a 10 times faster improvement.

## Publications

### On the combinatorics of binary serials-parallel graphs

Micha Hofri, Chao Li, Hosam Mahmoud

*Accepted by Probability in the Engineering and Informational Science.*

### Recovering All Generalized Order-Preserving Submatrices: New Exact Formulations and Algorithms

Andrew Trapp; Chao Li; Patrick Flaherty

*Submitted to Annals of Operations Research*