SHILEI ZHENG

EDUCATION

Cornell University, Ithaca, NY
Mathematics, B.A., expected May 2012
G.P.A. 3.7/4.0

SKILLS

Mathematical Modeling

First Place, Cornell Mathematical Contest in Modeling — Fall 2010

- Worked in a team of three to solve a real-world modeling problem and deliver results in 72 hours. Incorporated real data (traffic, geography), probability (failure analysis), and physical constraints into a solution optimizing cost and surveillance. Tested models in MATAB and produced a formal paper geared toward both laymen and specialists.

Meritorious, International Mathematical Contest in Modeling — Spring 2011

- Produced solution to an open-ended resource allocation problem. Working in a team of three, I made simplifying assumptions about the problem in order to understand the problem geometrically. Produced solutions enhanced with conceptual figures and graphics.

Numerical Methods

- Familiar with computer graphics methods utilizing computational fluid dynamics formulations.
- Experience in Lagrangian particle tracking and implicit methods.

Programming

- Proficient in Java, Python, MATLAB, LaTeX, Beamer. Some exposure to Fortran.

Chinese Language

- Fluent speaker of Mandarin and Cantonese, with basic reading and writing skills, too.

EXPERIENCE

Computational Thermo-Fluids Laboratory, Cornell — Present
Building a framework for droplet analysis to post-process data from numerical simulations of turbulent thermo-fluid flows. Building in Fortran. Advisor: Professor Olivier Desjardins

Math Support Center, Cornell — Fall 2010 - Present
Tutor students on a walk-in basis. I especially enjoy helping students with applications of real analysis.

Applied Math REU, University of California Los Angeles — Summer 2011
Developed a fast second order "fluid interface" reconstruction method, applicable to computer graphics and special effects simulations. Advisor: Professor Joseph Teran

CEBM, New York, New York — Fall 2006 - Summer 2010
Researched and compiled data on transportation industries as a summer analyst. Presented briefing on the Chinese airline industry to supervisor and sales team before their strategic trip to China.

Major Subjects	**Relevant Subjects**
Real Analysis I, II	Data Structures and Abstractions
Probability	Cryptography
Linear Algebra	Coding Theory
Dynamical Systems	Object-oriented Programming
Numerical Analysis	