Sicong "William" Chen

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EDUCATION

TULANE UNIVERSITY, SCHOOL OF SCIENCE AND ENGINEERING **New Orleans, LA**
Doctor of Philosophy in Physics (Computational Physics/Theoretical Physics) **December 2017**

NANJING UNIVERSITY, SCHOOL OF PHYSICS AND APPLIED PHYSICS **Nanjing, China**
Bachelor of Science in Physics (Condensed Matter Physics) **June 2012**

EXPERIENCE & LEADERSHIP

TULANE UNIVERSITY, Department of Physics and Engineering Physics **New Orleans, LA**
Research Assistant **May 2013-Present**

- In the project of extreme ocean waves, I designed, modified and implemented a PDE based random ocean wave model to study the propagation of ocean waves and the distribution of wave heights using Matlab (~1000 lines). I utilized this model to predict occurrence probabilities of extremely high ocean waves.
- In the project of universality among extreme waves, I further modified my Matlab codes to calculate the chaotic statistics of waves and rays in various physical contexts and discovered the universality among extreme waves. I performed the numerical calculations in parallel to high performance CPU clusters that reduced the run time by more than 80%. The analysis of chaotic behaviors involves large matrices (4 by 4 by 10000) and data size of GBs.
- In the project of universality among extreme waves, I designed, and implemented a semi-analytical model based on Floquet theory using Mathematica (~200 lines) to study the statistics of extreme waves on effectively lower dimensions.

TULANE UNIVERSITY, Department of Physics and Engineering Physics **New Orleans, LA**
Teaching Assistant **September 2012-Present**

Instructor/teaching assistant of undergraduate/graduate level Physics/Mathematics/Statistics/Computational courses

- Instructor of *Introductory Physics Lab I and II*, teaching Assistant *of Introductory Physics I and II*
- Teaching Assistant of *Computational concepts and Applications* (Matlab), teaching assistant of *Computational Physics & Engineering* (C/C++), teaching Assistant of *Quantum Information*

NANJING UNIVERSITY, School of Electronic Science and Engineering **Nanjing, China**
Research Assistant **May 2011-June 2012**

- In the project of microwave properties of FeCoSm alloys, after improving synthesis techniques and various measurements, I analyzed signal data (~100MB) from Vector Network Analyzer and fit with analytical expectations to identify complex magnetic permeability and complex conductivity.
- Modified and implemented FDTD (Finite-difference time-domain method) numerical simulations in C/C++ to calculate electromagnetic properties of FeCoSm families
- Excellent Bachelor thesis--Calculations about microwave absorption in certain rare earth alloys (Top 10% senior thesis)

NANJING UNIVERSITY, Students' Union **Nanjing, China**
Vice President **September 2010-March 2011**

Led team of over 200 students to serve more than 10000 students at two campuses of Nanjing University. Planned and organized university events, including academic conferences, sports, social activities and managed an annual budget over 100000 yuan. Reached out to faculties, alumni, companies and institutes to provide networking opportunities as well as career and academic advising and built students' clubs and communities, such as sports clubs and study abroad forum.

TULANE UNIVERSITY, Freeman School of Business **New Orleans, LA**
'For Fun' Project **November 2016**

Worked with a team of MBA students in the hedge fund course project. I designed a systematic commodity future trading strategy based on historical data (1960-2015) of monthly future prices of different sectors of commodities and economic movements (GDP/S&P500), where we allocate capital towards pro-cyclical sectors during economic upturns and limits the risk of significant loss by moving to defensive sectors during economic downturns.

SKILLS

Matlab, Mathematica, C/C++, Python, Linux (Ubuntu), HPC clusters, Parallel programming, Latex, Visual studio, R, Bloomberg

Interests

Basketball (I played college basketball in China), Road trips, Roller coasters, Betting on horse racing