Rongzhong Li

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Education

Wake Forest University, Winston-Salem, NC, USA
- Master of Science in Computer Science — Aug 2014 ~ May 2016
- Ph.D. in Physics — Aug 2010 ~ May 2015

Kuang Yaming Honors School, **Nanjing University**, Jiangsu, China
- Bachelor of Science in Physics — Sep 2006 ~ Jun 2010

Research Experience

Wake Forest University
- Research Assistant, Department of Computer Science — Jan 2015 ~ May 2016

Work with **Dr. Paúl Pauca** on the Boeing and WFU collaborative project to analyze GBs of sensor data to classify fiber failures using machined learning algorithms.

- Research Assistant, Department of Physics — Aug 2011 ~ May 2015

Worked in **Dr. Samuel Cho**'s Computational Biophysics Group and developed codes to setup molecular dynamics simulations, analyze TBs of coordinates, and visualize results.

Nanjing University University
- Undergraduate Researcher, Department of Physics — Sep 2009 ~ Jun 2010

Worked with **Dr. Jian Zhang** in **the Institute of Biophysics in Nanjing University** and wrote codes to simulate protein and RNA folding.

Publications

- **Li R**, Stevens CA, Cho SS. Molecular dynamics simulations of protein-nanoparticle biocorona formation. *Modeling, Methodologies and Tools for Molecular and Nano-scale Communications*, Eds. Junichi Suzuki, Tadashi Nakano. **Springer Publishing**. (in press, book chapter) 2016
- **Li R**. A true random number generator algorithm from digital camera image noise for varying lighting conditions. **IEEE Southeast Conference**. 2015
- **Li R**, Macnamara LM, Leuchter JD, Alexander RW, Cho SS. MD simulations of tRNA and aminoacyl-tRNA synthetases: dynamics, folding, binding, and allostery. **Int. J. Mol. Sci.**. 2015
- **Li R**, Chen R, Chen P, Wen Y, Ke P-C, Cho SS. Computational and experimental characterizations of silver nanoparticle-apolipoprotein biocorona. **J. Phys. Chem. B**. 2013
- **Li R**, Ge H, Cho SS. Sequence-dependent base stacking interactions guide tRNA folding energy landscapes. **J. Phys. Chem. B**. 2013

Provisional Patents

- System for identification of composite failure mechanisms with acoustic emission. 2016
- Devices, methods, and programs for true random numbers using digital camera. 2015

Extra-curricular Activities

- Compiled a personal poetry collection of 110 poems (a 30k-word book). 2006 ~ 2016
- Organized the individual CV review sessions for 9 physics and CS graduates. 2016
- Formed a team of 3 graduates on Virginia Tech Hackathon. 2016
- Coached as the student mentor for 3 undergraduates's research projects. 2013 ~ 2015
- Photographer and BBS admin for WFU Chinese Student & Scholars Association. 2013

Teaching Experience

- Taught Physics 266, Intermediate Laboratory (30 students/semester), WFU 2015
- Taught Physics 110, Introductory Physics (20 students/semester), WFU 2010 ~ 2015

Skills

C++; Mathematica; Matlab; Shell scripts; JavaScript; Gnuplot; Python; Maple; CUDA; LaTeX; SQL; Git; Photography; Photoshop; AutoCAD; 3D printer; Machine shop.

Projects

- Star-trail Photography Simulator — Feb 2016
  An iOS app developed during VTHacks that adds customized star-trails to night photos.
- Traditional Chinese Family Tree Builder — Aug 2015
  A database and visualization for a family tree that consists of 350+ people over 150+ years.
- Pocket Cube with Hint — May 2015
  A Mathematica program that simulates a pocket cube (2x2x2) game with recovering hints.
- Nano Fiber Measurer — Aug 2014
  A Mathematica tool package for measuring the dimensions of fibers in microscopy images.
- HealThy Body — Oct 2013 ~ Dec 2013
  An android app providing a lifestyle challenge for diabetic patients.
- Handmade Metal Irish Whistle — Mar 2012 ~ Jun 2012
  A hobbyist machine shop project that turns brass & alum. pipes into 3 low D Irish whistles.

Academic Awards

- Wake Forest University Graduate School Summer Research Support — 2015
- Wake Forest University Graduate School Alumni Student Travel Award — 2012 & 2015

Invited Talks

- IEEE Southeast Conference, Fort Lauderdale, FL. — 2015
  A true random number generator using digital camera noise under varying conditions.
- North Carolina Academy of Science 112th Annual Meeting, Winston Salem, NC. — 2015
  A true random number generator using digital camera noise under varying conditions.
- American Physical Society Meeting, Baltimore, MD. — 2013
  Ion concentration dependent tRNA folding energy landscapes.
- Center for Molecular Communication and Signaling, Winston-Salem, NC. — 2012
  Molecular conformational signaling networks determine ion concentration dependent tRNA folding mechanisms.

Poster Presentations

- WFU Graduate Student and Postdoctoral Research Day, Winston-Salem, NC. — 2015
  3MT talk: A real random number generator algorithm from digital camera image noise under varying lighting conditions.
- WFU Graduate Student and Postdoctoral Research Day, Winston-Salem, NC. — 2014
  3MT talk: GPU optimized simulation for silver nanoparticle bio-corona formation.
- Center for Molecular Communication and Signaling, Winston-Salem, NC. — 2013
  Ion-Concentration dependent MD simulations of tRNA folding shows back tracking event.
- WFU Graduate Student and Postdoctoral Research Day, Winston-Salem, NC. — 2012
  Ion-concentration dependent MD simulations of tRNA folding.
- Gordon Research Conference: Protein Folding Dynamics, Ventura, CA. — 2012
  Ion-concentration dependent MD simulations of tRNA folding.

Last Updated: May 2016