Shi Guo

https://guoshi1984.github.io/ 919-995-5612
guoshi1984@hotmail.com Aliso Viejo, CA

Summary
9 years of extensive coding experience in c++ and Java, from both research and industry.
5 years of experience in computational physics focusing on quantum Monte Carlo simulation.
Strong math and algorithm background in linear algebra, statistics, numerical optimization.

EXPERIENCE

Application Engineer, Advantest America, Inc. July.2013- Feb.2020
Developed and delivered system on chip(SoC) test programs for Advantest 93K automated tester platform.

Achievement Highlights

- Developed test methods in C++/java for DC test, digital test, RF(Transmitter/Receiver) test.
- Developed universal test method library for On-Die Parametric test on different TI DSP device, provided device characterization results to R&D.

Research Assistant, Department of Physics, North Carolina State University, Jun.2009-Jun.2013
Developed large-scale computation algorithms. Research focusing on computational physics modeling on electronic structure using quantum Monte Carlo method. Developed and maintained computational software code in C++.

Achievement Highlights

- Conducted parallel-computing simulations using first-principle methods, including Density Functional Theory, Quantum Monte Carlo, etc.
- Evaluated the dipole moment of weakly bonded ultracold molecules precisely and provided the data with good quality to research funding agency.
- Introduced new mathematical models for electron spin, built into the existing algorithm, redesigned every class and method in source code independently using C++(10k lines) for spin-orbit interaction calculation.
- Performed the first successful calculation in literature on spin-orbit effects of two dimensional electron gas in semiconductor devices.

EDUCATION

- **Ph.D Physics**
  North Carolina State University, Raleigh, NC, USA, Dec.2013 GPA:3.63/4.0
- **B.S. Physics**
  Shanghai Jiaotong University, Shanghai, China, Jun.2007

PUBLICATION

- **Shi Guo**, Michal Bajdich, Lubos Mitas and Peter J. Reynolds; Study of dipole moments of LiSr and KRb molecules by quantum Monte Carlo methods; Molecular Physics Vol. 111, Iss. 12-13,2013
- Cody A. Melton, Minyi Zhu, **Shi Guo**, Alberto Ambrosetti, Francesco Pederiva, and Lubos Mitas; Spin-orbit interactions in electronic structure quantum Monte Carlo methods; Phys. Rev. A 93, 042502