Dong Zhou

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SUMMARY

A scientist and programmer. Author of 30+ journal articles with 1000+ citations, h-index 19, and Erdös number ≤ 5. Familiar with magnetic resonance imaging, quantum computing, and biophysics.

SKILLS

Python, Go, C/C++, AWS

Computational physics/mathematics, Image processing, Machine learning

EXPERIENCE

- Senior scientist/Senior developer I, Schrödinger Inc.   2016-present

  Implement library for molecular dynamics trajectory analysis (Python, C++). Maintain scientific computing web services (AWS, Go, Python, PostgreSQL, REST, gRPC, Polymer.js). Maintain atom mapping module (subgraph isomorphism) for free energy perturbation. Participated in the design and implementation of the grand canonical Monte Carlo free energy perturbation trajectory APIs.

- Postdoc in radiology, Weill Medical College of Cornell University   2012–2016

  Solved ill-posed inverse problems in medical imaging such as magnetic susceptibility and susceptibility tensor imaging, magnetic quadrupole imaging, 3D phase unwrapping (Matlab, C/C++). Developed probes for transcranial magnetic stimulation both in simulation (COMSOL multiphysics) and on hardware (electronics, 3D printing).

- Postdoc in physics, Yale University   2011–2012

  Developed state preparation scheme using quantum bath engineering, and adiabatic phase based two-qubit CNOT gate scheme on circuit QED hardware (3D transmon). Simulated these schemes using Python package QuTip.

- Research assistant, University of Wisconsin-Madison   2007–2011

  Solved open quantum systems dynamics in the presence of classical stochastic noises both analytically and numerically (Matlab, C++). Developed schemes for quantum gate, quantum control, and entanglement preparation for quantum dot systems. Developed algorithm for graph isomorphism problem using continuous-time quantum random walk. Performed X-ray diffraction and synchrotron radiation experiments (X-ray absorption near edge spectroscopy and microscopy) and data analysis on nacre and other biological samples. Implemented GUI program for spectra analysis (KaleidaGraph).

EDUCATION

- Ph.D in physics, University of Wisconsin-Madison (GPA 4.0)   2006–2011
- Graduate study in physics, University of Georgia-Athens (GPA 4.0)   2004–2006
- B.S. in physics, Honored Mixed Class, Zhejiang University, China (GPA 3.8)   2000–2004