Dong Zhou

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Summary

A scientist and programmer. Author of 30+ journal articles with 1000+ citations. 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