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/gcloud
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 for FEP+ (aws/gcloud, Go, Python, PostgreSQL, gRPC, Polymer.js). Maintain atom mapping module (subgraph isomorphism) for free energy perturbation. Various other API design and implementation for the FEP+ products.

- 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