# Dong Zhou

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## SUMMARY

A scientist and programmer. Author of 30+ journal articles with 1000+ citations. Erdös number $\leq 5$. Familiar with magnetic resonance imaging, quantum computing, and biophysics.

## SKILLS

Python, Go, C/C++, AWS

Computational physics/mathematics, Image processing, Machine learning

Mathematical modeling, Optimization with regularization, Stochastic processes

## EXPERIENCE

- Senior scientist, Schrödinger Inc.      2016-now

  Implement library for molecular dynamics trajectory analysis (Python, C++). Maintain scientific computing web services (AWS, Go, Python, PostgreSQL, Polymer.js). Maintain atom mapping module (subgraph isomorphism) for free energy perturbation.

- 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) on nacre and other biological samples.

## 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