

# Dong Zhou

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US green card holder

## SUMMARY

Scientist and programmer; 30+ papers with 1000+ citations, Erdős number  $\leq 5$ . Familiar with crystallography, MRI, quantum computing, and biophysics.

## SKILLS

Python, Go, C/C++, Bash, AWS/Gcloud  
Computational physics/mathematics, Image processing, Machine learning

## EXPERIENCE

- Senior scientist/Senior developer I, Schrödinger Inc. 2016-present  
Implement crystal structure prediction library (Python). Maintain atom mapping module (subgraph isomorphism) for free energy perturbation. Implemented analysis library for molecular dynamics trajectories (Python, C++). Maintained scientific computing web services for FEP+ (aws/gcloud, Go, Python, PostgreSQL, gRPC, Docker, Polymer.js).
- Postdoc in radiology, Weill Medical College of Cornell University 2012–2016  
Solved ill-posed inverse problems 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). 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 experiments and data analyses for biological and geological samples such as nacre, pyrite, etc (machining, X-ray diffraction, X-ray absorption near edge spectroscopy and microscopy using synchrotron radiation @ SRC and LLNL). Implemented GUI program for spectra analysis (KaleidaGraph).

## EDUCATION

- Ph.D in physics, University of Wisconsin-Madison (GPA 4.0, 71 credits) 2006–2011
- Graduate study in physics, University of Georgia-Athens (GPA 4.0, 49 credits) 2004–2006
- B.S. from Honored Mixed Class, Zhejiang University (GPA 3.8, 196 credits) 2000–2004