

Daniel C. Elton

www.moreisdifferent.com
www.github.com/delton137/
www.kaggle.com/danielelton

Education

- Oct. 2016 **Ph.D. Physics**, *Stony Brook University*, Stony Brook, NY
Aug. 2009 **B.S., Physics**, *Rensselaer Polytechnic Institute*, Troy, NY
Mathematics minor, Magna Cum Laude, GPA 3.87

Recent Experience

2012-2016 **Graduate Research Assistant**, *Stony Brook University*

Ph.D. adviser: Prof. Marivi Fernández-Serra

- Planned and executed a detailed study of how water absorbs electromagnetic waves which led to the discovery of phonon-like modes in liquid water, which received media attention on Phys.org and other websites.
- Developed programming and code management skills by writing codes in Python and Fortran for quantum molecular dynamics simulation, spectrum fitting, and the computation of dielectric properties.
- Ran molecular dynamics simulations with thousands of molecules on HPC clusters, generating gigabytes of data for analysis.
- Parallelized my custom path integral molecular dynamics (PIMD) code with MPI.
- Developed a novel algorithm that speeds up PIMD simulation with density functional theory by a factor of 30 with acceptable losses in accuracy.
- Implemented a novel peak fitting technique in Python to fit dielectric spectra data.
- Published my work in the *Journal of Chemical Physics* and *Nature Communications*.
- Gave 6 talks at major conferences and numerous poster presentations.

2010-2012 **Graduate Teaching Assistant**, *Stony Brook University*

- Taught "Physics for the Life Sciences II" lab component.

2010 **Summer Internship**, *Los Alamos National Laboratory*

- Worked with Dr. Garrett Kenyon on biologically-inspired neural networks for computer vision.

2009-2010 **Graduate Teaching Assistant**, *Rensselaer Polytechnic Institute*

Computer skills

- Fortran, Matlab (3+ years)
- Mathematica, Python (1-2 years)
- MP/MPI, C, Bash, HTML (<1 year)
- L^AT_EX, Git, GROMACS, SIESTA, Jmol
- MS Windows, GNU/Linux

Select honors

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|------|------------------------------------------|------|------------------------------|
| 2014 | Peter B. Kahn prize | 2006 | Rensselaer Medal/Scholarship |
| 2009 | Rensselaer Founder's Award of Excellence | 2004 | Eagle Scout Award |

Leadership & service

- 2015-2016 Writer & Public Relations Director, *Stony Brook Frontiers* magazine
2013-2015 Senator & Social Concerns Committee member, Stony Brook Graduate Student Organization
2014,2015 Judge, Nassau County Science Competition

References available upon request.