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ADRIAN W. LANGE

SCIENTIST + PROGRAMMER

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SUMMARY

- Broad physical science background
- Strong computer programming skills
- Productive record of achievement

TECHNICAL SKILLS

- **Proficient**: C++, C, Python, Unix/Linux shell, awk, OpenMP, MPI, LaTeX
- **Familiar**: Java, Fortran, SQL, Perl, Pthreads, CUDA, HTML, CSS, JavaScript, CVS, SVN, Octave

EMPLOYMENT

Postdoctoral Appointee — **Argonne National Laboratory**, **Leadership Computing Facility** — **March 2012 – Present**

- Researched simulations of chemically reactive force fields and proton transport dynamics
- Developed code/algorithms for novel massively parallel simulations on IBM Blue Gene/Q supercomputer, Mira
- Increased code speed more than 8x, scalability to $\sim$0.4 million cores

Ph.D. Student Researcher — **The Ohio State University** — **June 2007 – March 2012**

- Researched quantum mechanical simulations of photoexcited DNA and solvent electrostatics
- Published 10 first author journal articles, 230+ total citations, h-index 6 (for listing, see my Google Scholar Citations)
- Presented research orally over 20 times at professional events/conferences
- Led recitations and conducted exams as teaching assistant for physical chemistry courses

EDUCATION

Columbus, OH — **The Ohio State University** — **June 2007 – March 2012**

- **Ph.D.** Computational/Physical Chemistry (GPA: 3.65) — Advisor: Prof. John M. Herbert

Columbus, OH — **The Ohio State University** — **August 2003 – June 2007**

- **B.S.** Chemistry with minor in Microbiology (GPA: 3.39)

Coursework:

- **Graduate/Undergraduate**: Quantum mechanics, Statistical mechanics, Computational chemistry, Multivariable calculus, Linear algebra, Differential equations, Computer programming, Numerical methods, Parallel computing
- **Supplemental online**:
  - **Coursera**: Machine learning, Data science, Algorithms, Databases
  - **Udacity**: Web development, GPU programming, Programming languages

ADDITIONAL TECHNICAL EXPERIENCE/PROJECTS

- **Q-Chem v4.0** (2009–2013): Lead author of polarizable continuum model and QM/MM codes in commercial software package, Q-Chem; software design committee member (C++, C, Fortran)
- **LAMMPS Ensembles** (2013): Multi-copy communication interface to open-source software, LAMMPS; contributions to main LAMMPS source code (C++, C, MPI, OpenMP, Python)
- **FMR** (2013): Reactive quantum fragment simulator; interfaced with Q-Chem (Python, C++, MPI)
- **DESMO** (2011): Highly parallel solvent model code; genetic algorithm dynamic load balancing (C++, OpenMP, MPI)

HONORS AND AWARDS

- Presidential Fellowship from The Ohio State University Graduate School (2011–2012; $33,150)
- Chemical Computing Group Research Excellence Award from American Chemical Society (2012; $1,150)
- U.S. Department of Energy Merit Scholarship for top poster presentation (2010; $400)
- American Society for Microbiology Undergraduate Research Fellowship (2006; $4,000)
- Ohio State Arts & Sciences Undergraduate Honors Research Scholarship (2006; $3,500)