

WILL MCFADDEN

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EDUCATION

University of Chicago

exp. May 2016

Ph.D. in Biophysical Science with certificate in University Teaching

GPA: 3.66/4

Thesis: *Computational models of filament recycling in active networks*

University of Illinois at Urbana-Champaign

Dec 2009

B.S. in Engineering Physics with minors in Mathematics and Computer Science

GPA: 3.67/4

SKILLS

Languages & Markup

C, Java, MATLAB, Python, JS, bash, SQL, CSS, HTML, LaTeX

Protocols, Frameworks, APIs

MPI, Hadoop, GAE, AWS, Arduino, Bluetooth, D3, JSON, GMaps

Packages & Software Tools

scipy, pandas, sklearn, IPython, git, AutoCAD, Inkscape, WordPress

Nontechnical Skills

Scientific Writing, Public Speaking, Teaching, Mentoring, Mindfulness

EXPERIENCE

University of Chicago, Research Computing Center

Apr 2015 - Present

Research Assistant

Chicago, IL

- Analyzed supercomputer power usage to optimize datacenter energy saving strategies
- Launched "real-world" week-long benchmarking routines to measure energy vs runtime trade-offs

Artifice Tech Education

Sep 2015 - Present

Board Secretary and CTO

Chicago, IL

- Managed volunteer instructors and aided recruiting efforts to quadruple our volunteer staff
- Led development team in administrating internal operations and expanding public relations efforts

Artifice Tech Education

Dec 2013 - Present

Lead Instructor

Chicago, IL

- Launched after-school electronics courses and developed online learning materials for ages 12+

University of Chicago

March 2012 - Present

Teaching Assistant

Chicago, IL

- Designed and executed original graduate workshops in computational modeling and biophysics
- Assisted with teaching undergraduate courses in biology, geophysics, chemistry

University of Chicago, Munro Research Group

Aug 2011 - Present

Ph.D. Research Assistant

Chicago, IL

- Devised statistical methods for novel single-molecule measurement techniques
- Collaborated with experimentalists to build computational models of active biopolymer materials

Bionic Trader Systems

Sep 2011 - Dec 2012

Software QA Consultant

Chicago, IL

- Advised on user experience and stress testing of financial trading software

Institute for Genomic Biology, Robinson Research Group*Computational Research Assistant*

Oct 2009 - May 2010

Urbana, IL

- Built automated video data collection system and data analysis pipeline

National Center for Supercomputing Applications, ISDA Research Group*Research Programmer*

Jun 2008 - Jun 2009

Urbana, IL

- Developed machine vision software for large volume electronic document appraisal

AWARDS AND HONORS

University of Chicago Art+Science Collaboration Grant 2011, 2015

Physical Sciences Teaching Prize, Honorable Mention 2014

NIH Federal Training Grant 2010-2012

University of Illinois, Student Employee of the Year, Honorable Mention 2010

University of Illinois College of Engineering, James Scholars 2007-2010

National Merit Scholarship 2006-2010

LIFE ACHIEVEMENTS

Survived a day without water in a desert slot canyon; Climbed a downtown Chicago high rise; Played at the House of Blues; Gave a best man's speech; Built a treehouse in a Puerto Rican rain forest; Hitchhiked to California; Wrote a rock opera; Went without eating for three days; Biked from Illinois to the Atlantic;

PUBLICATIONS

- William McFadden Jon Michaux and Edwin Munro. Modeling the role of filament recycling in steady-state flows of actomyosin networks. In *Biophysical Society 60th Annual Meeting*, 2016.
- Will McFadden Anita Nikolich Ray Parpart and Biral Runesha. Saving on data center energy bills with e-deals: Electricity demand-response easy adjusted load shifting. In *USENIX Workshop on Cool Topics in Sustainable Data Centers*, 2016.
- W McFadden A Nikolich S Jacobs, R Parpart and B Runesha. Conserving energy in heterogeneous clusters. In *MindBytes Research Computing Expo and Symposium*, 2015.
- Francois B Robin, William M McFadden, Baixue Yao, and Edwin M Munro. Single-molecule analysis of cell surface dynamics in *caenorhabditis elegans* embryos. *Nat Meth*, 11(6):677–682, June 2014.
- J. Alberts W. McFadden and E. Munro. Physical models of cortical flows during polarity maintenance in *c. elegans* embryos. In *ASCB Annual Meeting*, 2012.
- S-C Lee William McFadden, Rob Kooper and Peter Bajcsy. *Application of Machine Learning*, chapter Comprehensive and Scalable Appraisals of Contemporary Documents, pages 87–108. InTech, 2010.
- Jason Kastner Michal Ondrejcek Kenton McHenry Rob Kooper, William McFadden and Peter Bajcsy. Mining large size complex pdf documents for industrial knowledge management and preservation. In *2009 NCSA Private Sector Program (PSP) Annual Meeting*, 2009.
- W. McFadden S-C. Lee and P. Bajcsy. Text, image and vector graphics based appraisal of contemporary documents. In *7th International Conference on Machine Learning and Applications*, 2008.
- R. Kooper M. Ondrejcek A. Yahja W. McFadden, K. McHenry and P. Bajcsy. Advanced information systems for archival appraisals of contemporary documents. In *4th IEEE International Conference on e-Science and Microsoft eScience Workshop*, 2008.