

**Adam A. Smith**  
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- Education**
- PhD Computer Science (2009)  
University of Wisconsin, Madison  
Dissertation: *Classification and Alignment of Gene-Expression Time-Series Data*
- MS Computer Science (2002)  
University of Wisconsin, Madison  
Thesis: *Spread Spectrum Watermark Estimation Through Autocorrelation*
- BA Computer Science/Mathematics (combined major) and Physics with Honors (1999),  
summa cum laude  
Lewis & Clark College  
Thesis: *A Computer Model of the Solar Magnetic Field*
- Research Interests**
- My chief interests are in machine learning and its applications in bioinformatics. My thesis research has involved modeling, aligning, and classifying high-dimensional time series data, with a particular emphasis on gene-expression data.
- Publications**
- Adam A. Smith, Aaron Vollrath, Christopher A. Bradfield, and Mark Craven. Clustered alignments of gene-expression time series data. *Accepted by 2009 International Conference on Intelligent Systems for Molecular Biology*. (Selected for podium presentation, 18% acceptance rate.)
- Irene M. Ong, Adam A. Smith, Hairong Wei, Mark Craven, Ron Stewart, James Thomson, and David Page. Ensemble dynamic Bayesian networks for inferring gene regulation from time-series data. *In progress*.
- Adam A. Smith and Mark Craven. Fast multisegment alignments for temporal expression profiles. In *Computational Systems Bioinformatics Proceedings*, volume 7, pages 315–326, 2008 Imperial College Press. (Selected for podium presentation, 22% acceptance rate.)
- Adam A. Smith, Aaron Vollrath, Christopher A. Bradfield, and Mark Craven. Similarity queries for temporal toxicogenomic expression profiles. *PLoS Computational Biology*, 4(7):e1000116, July 2008.
- Herschel B. Snodgrass and Adam A. Smith. On the use of correlations to determine the motions and properties of mesoscale magnetic features in the solar photosphere. *Astrophysical Journal*, 546:528–541, January 2001.
- Herschel B. Snodgrass and Adam A. Smith. The effects of meridional motion on the determination of rotation by tracer tracking. *Solar Physics*, 191(1):21–35, January 2000.
- Teaching**
- Delta Certificate  
<http://www.delta.wisc.edu/>  
The Delta Program is a research, teaching, and learning community for current and future science and math faculty at the University of Wisconsin. Its three main pillars are teaching-as-research, learning-through-diversity, and learning communities. As part of the program, I took teaching classes and completed an internship helping to develop teaching methods with a local science museum.

Mentor (Summer 2007)

*Computational Biology and Biostatistics Summer Research Program*

I acted as advisor to an undergraduate conducting original research related to mine during a ten week program. We met twice weekly to discuss her progress, and to teach her programming skills. I worked with her to prepare research posters and a final report describing her work. I also met weekly with other mentors in the same program to discuss teaching techniques and progress.

Educational Booth (Spring 2006)

I developed and worked at an educational booth at *Science Expeditions*, a large yearly science fair. I taught children and adults about infrared and ultraviolet light, using both a custom interactive computer game that I wrote and hands-on experiments with both IR and UV light.

Instructor (Summer 2004)

*Computational Biology and Biostatistics Summer Research Program*

I created a bioinformatics curriculum for use in an intensive one-week course for undergraduates in a summer research program. Topics included dynamic programming, sequence alignment, Markov models, and expectation-maximization algorithms.

Teaching Assistant (Fall 2000)

*University of Wisconsin Computer Science Department*

I taught weekly recitation sections for an introductory level programming class using Java. I also helped design the lessons used.

Physics Tutor (Fall 1997–Spring 1999)

*Lewis & Clark College Physics Department*

I ran a twice-weekly walk-in help desk for physics and astronomy students, as well as taught occasional review sessions.

## Software

Curve Analysis Tool

A Java package implementing algorithms for classifying and aligning high-dimensional time series data.

<http://www.biostat.wisc.edu/~aasmith/catcode/>

cSky

A virtual planetarium that can be inserted as a Flash applet into web pages. It is made to educate middle schoolers to adults about basic astronomical concepts, such as star motion, planet motion, and the cause of the seasons.

<http://pages.cs.wisc.edu/~aasmith/csky/csky.swf>

## Awards & Honors

Phi Beta Kappa (1999)

Barry M. Goldwater Scholar (1998)

Sigma Pi Sigma (Physics Honor Society) (1997)

## References

Mark Craven (advisor)  
Associate Professor, Departments of Biostatistics & Medical Informatics and  
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