

Michael Joseph Waddell

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Education

2004-2006, Ph.D.(expected), University of Wisconsin - Madison, Department of Computer Sciences (Specialization: Artificial Intelligence; Minor: Biomedical Statistics; Advisor: Dr. C. David Page; Dissertation: (in progress))

2002-2004, M.S., University of Wisconsin - Madison, Department of Computer Sciences (Specialization: Artificial Intelligence; Advisor: Dr. C. David Page)

2000-2001, University of Wisconsin Medical School (Withdrew after successful completion of first year.)

1995-2000, B.S., University of Wisconsin - Madison. (Majors: Mathematics, Biochemistry and Molecular Biology; Graduated with Honors; Advisor: Dr. Ronald T. Raines; Thesis: (ADD LINK))

Grants Received

Computation and Informatics in Biology and Medicine Training Program Fellowship, 2002-2005

University of Wisconsin Medical Scholars Training Program Fellowship, 2000-2001

Howard Hughes Scholars Fellowship recipient, 1997 (declined)

Letters and Science Honors Sophomore Summer Apprenticeship recipient, 1996

Honors and Awards

Barry M. Goldwater Scholar, 1997-1999

National Merit Scholar

University of Wisconsin Medical Scholar 1995-2000

University of Wisconsin Dean's List 1995-2000 (6 out of 10 semesters)

Phi Beta Kappa Honor Society, 1998-2000

Phi Kappa Phi Honor Society, 1997-2000

Golden Key National Honor Society, 1997-2000 (Web Design Subcommittee, 1998-2000)

Boy Scout Eagle Award

Work Experience

(non-research/teaching related)

Intern. Designed and implemented SELDI Filter, an application for automated analysis of proteomic mass spectrometry data. Abbott Laboratories. Abbott

Park, Illinois. May 2003-August 2003. Manager: Dr. John C. Rogers.

Programmer. Designed and maintained database applications using Microsoft Access and Visual Basic. FlipSide Printing, L.L.C. Madison, Wisconsin. May 2001-present. Manager: Daniel C. Kahl.

Programmer. Designed and implemented a payroll system using Visual Basic and Microsoft Access. Designed club website. Waukesha Trap and Skeet Club. Waukesha, Wisconsin. January 1997-May 1997. Manager: Gary Schaetzel.

Assistant Office Manager. Cashiered and managed staffing, finance, accounting and inventory. Waukesha Trap and Skeet Club. Waukesha, Wisconsin. May 1991-August 1995. Manager: Gary Schaetzel.

Research Experience

Research Assistant. Department of Computer Sciences and Department of Biostatistics & Medical Informatics, University of Wisconsin - Madison. November 2001-present. Advisor: Dr. C. David Page. Integration of human expert feedback into machine learning systems.

Research Assistant. Department of Mathematics, University of Wisconsin - Madison. January 2000-May 2000. Advisor: Dr. James Propp. Exploration of abelian sand-pile models through theoretical and computational analysis.

Research Assistant. Department of Biochemistry, University of Wisconsin - Madison. May 1998-May 2000. Advisor: Dr. Ronald T. Raines. Investigation of the inductive effect in the stabilization of hydroxyproline residues in collagen from a computational chemistry perspective.

Research Assistant. Comprehensive Cancer Center, University of Wisconsin - Madison. August 1997-May 1998. Advisor: Dr. David A. Boothman. Examined DNA mismatch repair damage in human colorectal tumor cells

Research Assistant. McArdle Laboratory for Cancer Research, University of Wisconsin - Madison. April 1996-May 1997. Advisor: Dr. Charles B. Kasper. Investigation into the structure/function relationship in NADPH-cytochrome P450 oxidoreductase.

Articles

M. Molla, M. Waddell, D. Page, and J. Shavlik. Using machine learning to design and interpret gene-expression microarrays. *AI Magazine*, 25(1):23-44, 2004.

J. Hardin, M. Waddell, C. D. Page, F. Zhan, B. Barlogie, J. Shaughnessy, Jr., and J. Crowley. Evaluation of multiple models to distinguish closely related forms of disease using DNA microarray data. *Statistical*

Applications in Genetics and Molecular Biology, In press, 2004.

- I. d. C. Dutra, D. Page, V. S. Costa, J. W. Shavlik, and M. Waddell. Toward automatic management of embarrassingly parallel applications. In H. Kosch, L. Bszrmnyi, and H. Hellwagner, editors, *Euro-Par 2003. Parallel Processing, 9th International Euro-Par Conference, Klagenfurt, Austria, August 26-29, 2003. Proceedings*, volume 2790 of *Lecture Notes in Computer Science*, pages 509-516. Springer-Verlag, Aug 2003.
- D. Page, F. Zhan, J. Cussens, M. Waddell, J. Hardin, B. Barlogie, and J. Shaughnessy, Jr. Comparative data mining for microarrays: A case study based on multiple myeloma. Technical Report 1453, Computer Sciences Department, University of Wisconsin, Nov 2002.
- M. L. DeRider, S. J. Wilkens, M. J. Waddell, L. E. Bretscher, F. Weinhold, R. T. Raines, and J. L. Markley. Collagen stability: Insights from NMR spectroscopic and hybrid density functional computational investigations of the effect of electronegative substituents on prolyl ring conformations. *Journal of the American Chemical Society*, 124(11):2497-2505, Mar 2002.

Seminars

- M. J. Waddell. Modeling patterns in single-nucleotide polymorphism data for predicting cancer susceptibility: A case study in multiple myeloma. Seminar, Mar 2004. Computation and Informatics in Biology and Medicine (CIBM) Seminar Series, University of Wisconsin-Madison. Madison, Wisconsin. March 2, 2004.
- M. J. Waddell. Predicting cancer susceptibility from single-nucleotide polymorphism data: A case study in multiple myeloma. Seminar, July 2003. National Library of Medicine Training Directors' Meeting 2003, Bethesda, Maryland, July 9, 2003.
- M. J. Waddell. Toward the development of diagnostic models capable of distinguishing multiple myeloma, MGUS, and normal plasma cells using global gene expression profiles. Seminar, Feb 2003. Computation and Informatics in Biology and Medicine (CIBM) Seminar Series, University of Wisconsin-Madison. Madison, Wisconsin. February 11, 2003.

Poster Presentations

- M. J. Waddell. SELDI filter: Automating the filtering and analysis of proteomic mass spectrometry data. Poster, July 2003. Abbott Laboratories Science Intern Poster Session. Abbott Park, Illinois. July 23, 2003.
- M. Waddell, D. Page, F. Zhan, B. Barlogie, J. Shaughnessy, Jr., J. Hardin, and J. Cussens. Comparative data mining for microarrays: A case study based on

multiple myeloma. Poster, Aug 2002. International Conference on Intelligent Systems for Molecular Biology. Poster Session 1. Edmonton, Alberta, Canada. August 4, 2002.

- M. J. Waddell. Theoretical analysis of the basis of collagen stability. Poster, Apr 2000. Hilldale Undergraduate/Faculty Research Seminar. University of Wisconsin-Madison. Madison, Wisconsin. April 24, 2000.

Special Skills

Computer: Operating Systems: Microsoft Windows 3.1, 95, 98, NT, ME, 2000, XP; MS-DOS; MacOS 9; MacOS X; Linux, BSD, Solaris, IRIX

Programming: C/C++, JAVA, PERL, Prolog, SQL, Lisp, SML, Visual Basic, JavaScript, HTML, CGI-BIN, Bash scripting

Desktop Publishing: L^AT_EX; Microsoft Office 95, 97, 2000, XP; WordPerfect Office

System Administration: IRIX (Laboratory of Dr. Ronald T. Raines. Department of Biochemistry, University of Wisconsin - Madison. May 1999-May 2000.); Linux, Windows 98, Windows 2000 and MacOS X (Home-based LAN. August 1998-present.)

Academic: Intense curiosity and appetite for knowledge; strong problem solving and research skills; comfortable in unstructured academic environments where initiative and creativity are encouraged. Strong interdisciplinary background in both biological and physical sciences.

Memberships

Association for Computing Machinery (ACM)

American Association for Artificial Intelligence (AAAI)

International Society for Computational Biology (ISCB)

Institute of Electrical and Electronics Engineers(IEEE)

References

(available upon request)