

Blazej Bulka

Ph.D. Candidate

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RESEARCH INTERESTS

Artificial Intelligence. Planning, shape of planning search spaces, and heuristics to guide the search process. Learning efficient planning techniques and fact representations.

EDUCATION

- Aug 2003 – present **Ph.D. Candidate (Computer Science)**, University of Maryland, Baltimore County (UMBC)
Research Advisor: Prof. Marie desJardins
- Jul 2002 – Jul 2003 **Ph.D. Student (Computer Science)**, Adam Mickiewicz University (UAM), Poland
Research Advisor: prof. dr hab. Zygmunt Vetulani
- Oct 1997 – Jun 2002 **M.Sc. Student (Computer Science)**, Adam Mickiewicz University (UAM), Poland
Earned M.Sc. Degree (*magister*) in May 2002
M.Sc. Thesis Title: *Application of Mobile Agent Software in Information Management* (in Polish).
Committee: prof. dr hab. Ryszard Urbański, prof. dr hab. Zygmunt Vetulani, dr Wiesław Kurc

EMPLOYMENT HISTORY

- Jan 2004 – present **Graduate Research Assistant**
University of Maryland, Baltimore County in MAPLE research group (Department of Computer Science and Electrical Engineering) and Freeland Lab (Biological Sciences Department; until February 2006)
- Jun 2007 – Aug 2007 **Student Associate**
SRI International, Artificial Intelligence Center
- Aug 2003 – Dec 2003 **Graduate Teaching Assistant**
University of Maryland, Baltimore County
- Sep 2002 – Jul 2003 **Researcher**
Research Center for Information Technologies at Universität Karlsruhe (TH), Germany (FZI Forschungszentrum Informatik an der Universität Karlsruhe)
Supported by the European Commission as a Marie Curie Fellowship holder.
- Apr 2001 – May 2002 **Programmer and designer**
Edustrada sp. z o.o., Poland
- Jun 2000 – Mar 2001 **Programmer and designer**
Wynpro Solutions sp. z o.o., Poland
- Oct 1999 – May 2000 **System administrator**
Adam Mickiewicz University, Poland

PEER-REVIEWED PUBLICATIONS

Pauline Berry, **Blazej Bulka**, Bart Peintner, Mark Roberts, and Neil Yorke-Smith. "Neptune: A Mixed-Initiative Environment for Planning and Scheduling." The 21st Florida Artificial Intelligence Research Society Conference (FLAIRS-08), Coconut Grove, FL, May 15–17, 2008. (*Voted the best poster of FLAIRS-2008*).

Blazej Bulka, and Marie desJardins. "Useful Topological Features of Planning State Spaces." The Third North East Student Colloquium on Artificial Intelligence (NESCAI08), Ithaca, NY, May 2–4, 2008.

Yi Lu, **Blazej Bulka**, Marie desJardins, and Stephen J. Freeland, "Amino Acid Quantitative Structure Property Relationship Database: A Web-based Platform for Quantitative Investigations of Amino Acids." *Protein Engineering Design and Selection*, PEDS Advance Access, June 8, 2007.

Gang Wu, Yuanpu Zheng, Imran Qureshi, Htar Thant Zin, Tyler Beck, **Blazej Bulka**, and Stephen J. Freeland, "SGDB: a Database of Synthetic Genes Re-designed for Optimizing Protein Over-expression." *Nucleic Acids Research* 35:D76-9, 2007.

Marie desJardins, **Blazej Bulka**, Ryan Carr, Andrew Hunt, Priyang Rathod, and Penny Rheingans, "Heuristic Search and Information Visualization Methods for School Redistricting." *AI Magazine, Special Issue on Innovative Applications (Best Papers of IAAI-2006)* 28(3):59-72, 2007.

Blazej Bulka, "Analyzing, Learning, and Shaping Planning Search Spaces." ICAPS Doctoral Consortium 2006.

Blazej Bulka, Marie desJardins, and Stephen J. Freeland, "An Interactive Visualization Tool to Explore the Biophysical Properties of Amino Acids and Their Contribution to Substitution Matrices." *BMC Bioinformatics* 7:329, 2006.

Blazej Bulka, Matthew Gaston, and Marie desJardins, "Local Strategy Learning in Networked Multi-Agent Team Formation." *Journal of Autonomous Agents and Multi-Agent Systems* 15(1):29-45, 2006.

Marie desJardins, **Blazej Bulka**, Ryan Carr, Andrew Hunt, Priyang Rathod, and Penny Rheingans, "Heuristic Search and Information Visualization Methods for School Redistricting." Eighteenth Annual Conference on Innovative Applications of Artificial Intelligence (IAAI-06), Boston, MA July 16-20, 2006.

Blazej Bulka, Matthew Gaston, and Marie desJardins, "Local Learning to Improve Organizational Performance in Networked Multiagent Team Formation." AAAI Workshop on Multiagent Learning, Pittsburgh, PA, July 10, 2005.

OTHER PUBLICATIONS

Blazej Bulka, and Marie desJardins, "Integrating Top-down Planning with a Bottom-up Approach that Learns to Locally Combine Actions." AAAI Spring Symposium on Distributed Plan and Schedule Management, Stanford, CA, March 27–29, 2006.

Gang Wu, **Blazej Bulka**, Yuanpu Zheng, and Stephen Freeland "Creating RGDB: a Sequence Database of Recorded Genes," a poster at "ALA IX: Futures in Biomedical Research" Symposium, University of Maryland, Baltimore County, November 15, 2005.

Blazej Bulka "Learning an Efficient Team Formation Strategy in a Networked Multiagent Environment," a poster at Fourth Americas School on Agents and Multiagent Systems, Pittsburgh, PA, July 8, 2005.

Blazej Bulka, Marie desJardins, and Stephen J. Freeland, "Impact of CLUSTALW Parameters on the Quality of Protein Sequence Alignment," a poster at "ALA VIII: Futures in Biomedical Research" Symposium, University of Maryland, Baltimore County, November 17, 2004.

Yi Lu, **Blazej Bulka**, Stephen J. Freeland, and Marie desJardins, "Developing an Interactive Web Platform for Exploring Amino Acid Substitution Patterns," a poster at Evolution 2004 Conference, Fort Collins, CO, June 26-30, 2004.

Blazej Bulka, "Integrating Knowledge From Multiple Data Sources To Coordinate Activities of Independent Entities." Marie Curie Fellowships European Scientific Workshop on Developing a Scientific Career, Donostia-San Sebastián, Spain, November, 2002.

Blazej Bulka, “Perl Scripting Language” (in Polish; original title: *Język skryptowy Perl*). Internal publication of the Department of Mathematics and Computer Science, Adam Mickiewicz University, Poland, 1999.

TEACHING EXPERIENCE AND MENTORING ACTIVITIES

- Fall 2003 CMSC202, “Computer Science II for Majors,” *Object-Oriented Programming and Design using C++*, Teaching Assistant at UMBC.
- 1998 – 2001 President of Java Section in the Research Group of Computer Science Students at Adam Mickiewicz University (Poland). Involved in teaching Java language within the group.
- 2000 Organizer of Departmental *Collegiate Programming Contest* at the Department of Mathematics and Computer Science at Adam Mickiewicz University (Poland).

HONORS AND AWARDS

- Best Poster Award at the 21st Florida Artificial Intelligence Research Society Conference (FLAIRS-08), Coconut Grove, FL, May 15–17, 2008 (together with Pauline Berry, Bart Peintner, Mark Roberts, and Neil Yorke-Smith).
- Departmental Scholarship for Outstanding Student Performance (1998 – 2002; renewed each year by the Department of Mathematics and Computer Science, Adam Mickiewicz University, Poland)
- Graduation Award of the Dean of the Department of Mathematics and Computer Science for Outstanding Student Performance (2002; Adam Mickiewicz University, Poland)
- Award of the Dean of the Department of Mathematics and Computer Science for voluntary work in the computer laboratories of the department (1998; Adam Mickiewicz University, Poland)

PROFESSIONAL SERVICE

Reviewing:

- Reviewing for Evolutionary Bioinformatics.
- Reviewing for IJCAI 2005.
- Reviewing for AAAI 2005.

AFFILIATIONS

- AAAI (since 2005)
- Association for Computing Machinery (since 1999)
- KoLiber Association of Poland (since 2002)
- Phi Kappa Phi Honor Society (since 2005)
- Polish Student Association in Washington, D.C. (since 2005)
- Upsilon Pi Epsilon Honor Society in the Computing and Information Disciplines (since 2005)