

James S. Atlas

CURRICULUM VITAE

Home: 22 Clarion Ct.
Newark, DE 19713
(302) 737-6088
atlas@cis.udel.edu
<http://www.cis.udel.edu/~atlas>

Office: Multi-agent Systems Lab
University of Delaware
447 Smith Hall
Newark, DE 19716
(302) 831-6325

RESEARCH INTERESTS

Optimization algorithms, artificial intelligence, distributed systems, multi-agent systems, high performance computing, wireless networking, agent-oriented software engineering, bioinformatics

EDUCATION

University of Delaware Newark, DE
Ph.D. in Computer and Information Sciences. GPA 3.85/4.0 Expected
Thesis: Efficient Coordination Techniques for Non-deterministic Multi-agent Systems May 2009
Advisor: Keith Decker

University of Delaware Newark, DE
M.S. in Computer and Information Sciences. GPA 3.83/4.0 2006

Messiah College Grantham, PA
B.A. double major in Computer Science and Christian Ministries. GPA 3.75/4.0 2001

INDUSTRY AND RESEARCH EXPERIENCE

Research Assistant Newark, DE
Multi-agent Systems Lab, Global Computing Lab, University of Delaware 2005 – present

- Designed and implemented a prototype human-grid problem solving network that integrated web services with Google personal accounts.
- Developed a test bed for Distributed Constraint Optimization (DCOP) algorithms and problem domains. Explored new algorithms and techniques for DCOP.
- Extended DCOP to non-deterministic environments with specific implementation for the Defense Advanced Research Projects Agency (DARPA) Coordinators project.
- Improved volunteer computing scheduling policies for the Berkeley Open Infrastructure for Network Computing (BOINC) using DCOP techniques.
- Authored research papers and posters, gave internal technical report presentations, and presented research at conferences and workshops.

Research Intern Philadelphia, PA
Hx Technologies Summer 2007

Designed and implemented a fault-tolerant, secure, peer-to-peer image cache based on mathematical coding for medical imaging. The cache enables users to retrieve medical imaging at participating institutions without allowing individual institutions to reconstitute parts of the image.

Research Intern Newark, DE
Quantum Leap Innovations Summer 2005

Designed and implemented a Multi-Agent Management System (MMS) for use with the Java Agent Development Framework (JADE). The MMS assists with complex deployments, real-time monitoring and management of agent resources, and visualization of system interactions/dependencies.

Senior Software Developer*Payment Technologies (acquired by JPMorgan Chase 2005)***Mechanicsburg, PA**

2001 – 2004

- Designed and implemented key components for a J2EE business platform supporting payment, loyalty, and account based transaction services.
- Presented design and technologies to clients.
- Participated in all phases of the development cycle using UML to facilitate communication.

TEACHING EXPERIENCE

Instructor*University of Delaware***Newark, DE**

2004, 2007 – present

- Taught two courses, Computers and Information Systems and Object-Oriented Programming with Java in Winter and Summer sessions respectively.
- Responsible for lectures, assignments, evaluation, and assisting students during office hours.
- Significantly modified curriculum and materials to meet a new department initiative for OOP with Java, including restructuring a third of the lecture material and designing new assignments and a final project.

Teaching Assistant*University of Delaware***Newark, DE**

2004, 2007 – present

Held lab sessions, classroom review sessions, office hours, and graded for several undergraduate and graduate courses including courses in programming (C++), architecture, bioinformatics, and artificial intelligence.

Mentor*University of Delaware***Newark, DE**

Summer 2006, Winter 2007

Matt Warner, undergraduate student. Supervised a project to develop human interaction component for human-computer problem solving grid. Supervised code contributions for the implementation of a hybrid algorithm for DCOP (published in DCR workshop at AAMAS08).

Teaching Assistant*Messiah College***Grantham, PA**

1999 – 2001

Instructed, created, set up, observed, and evaluated lab projects, tutored one-on-one, researched for Dr. Gene Chase, and taught group lessons for the department's help room.

PUBLICATIONS

J. Atlas, K. Decker. Coordination of Agent Schedules using Distributed Neighbor Exchange. *Submitted.*

J. Atlas, T. Estrada, K. Decker, M. Taufer. Balancing Scientist Needs and Volunteer Preferences in Volunteer Computing using Constraint Optimization. *Submitted.*

J. Atlas. A Distributed Constraint Optimization Approach for Coordination under Uncertainty. *To appear in AAMAS09 [short paper].* Acceptance Rate: 22% full, 20% short.

J. Atlas, M. Warner, and K. Decker. A Memory Bounded Hybrid Approach to Distributed Constraint Optimization. *Proceedings of the International Workshop on Distributed Constraint Reasoning (DCR) at AAMAS08, 37-51, 2008.*

J. Atlas and K. Decker. Task Scheduling using Constraint Optimization with Uncertainty. *Proceedings of the International Workshop on Coordinating Agents' Plans and Schedules (CAPS) at AAMAS07, 25-28, 2007.*

J. Atlas and K. Decker. A Complete Distributed Constraint Optimization Method For Non-Traditional Pseudotree Arrangements. *Proceedings of the International Joint Conference on Autonomous Agents and Multiagent Systems (AAMAS07)*, 736-743, 2007. Acceptance Rate: 23%

J. Atlas, K. Decker, and M. Swamy. Flexible Grid Workflows Using TÆMS. *Proceedings of the Workshop on Exploring Planning and Scheduling for Web Services, Grid, and Autonomic Computing at AAAI05*, 24-31, 2005.

J. Atlas. Mixed Scale Coordination. University of Delaware. Technical Report. 2006.

PRESENTATIONS

“A Memory Bounded Hybrid Approach to Distributed Constraint Optimization” *DCR Workshop*, 2008.

“Task Scheduling using Constraint Optimization with Uncertainty” *CAPS Workshop*, 2007.

“A Complete Distributed Constraint Optimization Method For Non-Traditional Pseudotree Arrangements” *AAMAS07*, 2007.

“Flexible Grid Workflows Using TÆMS” *Exploring Planning and Scheduling Workshop*, 2005.

PROFESSIONAL SERVICE

Board member, Messiah College Computer Science Advisory Board, 2005 – present.

Auxiliary reviewer: AAAI, AAMAS

REFERENCES

Dr. Keith Decker (advisor)
Department of Computer and Information Sciences
University of Delaware
444 Smith Hall
Newark, DE 19716-2586
Phone: (302) 831-1959
E-mail: decker@cis.udel.edu

Dr. Michela Taufer
Department of Computer and Information Sciences
University of Delaware
406 Smith Hall
Newark, DE 19716-2586
Phone: (302) 831-0071
E-mail: taufer@cis.udel.edu

Dr. Errol Lloyd
Department of Computer and Information Sciences
University of Delaware
416 Smith Hall
Newark, DE 19716-2586
Phone: (302) 831-1958
E-mail: elloyd@cis.udel.edu

Dr. Gene Chase (Professor Emeritus)
Department of Mathematical Sciences
Messiah College
One College Avenue
Grantham, PA 17027
Phone: (717) 766-2511
E-mail: chase@messiah.edu

Industry references available on request:

Joe Murray
VP, Technology
Hx Technologies, Inc.

Gary Moyer
Development Manager
JP Morgan Chase