

Jonathan M. Pikalek

Department of Math and Computer Science
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Education

North Dakota State University
Fargo, ND
PhD in Computer Science Presently Enrolled
Current Cumulative GPA 4.0

North Dakota State University
Fargo, ND
Master of Science, Computer Science May 2006
49 credit hours
Cumulative GPA 4.0

North Dakota State University May 2002
Fargo, ND
Bachelor of Science Computer Science with honors
148 credit hours
Minors in Psychology and Mathematics
Cumulative GPA 3.71

Edward Schreyer School (High School) June 1995
Beausejour, MB, CA
Honors in Literary English

University of Winnipeg March 1994
Winnipeg, MB, CA
Completed a 40 hour enrichment course in analytical mathematics

Presentations

“Constrained Resource Collection Problems,” Astronaut Scholarship Foundation Technical Conference, May 3, 2008.

“Non-Photorealistic Rendering,” NDSU Computer Science guest lecture, November 7, 2007.

“Discrete versus Continuous Simulations,” NDSU Computer Science guest lecture, January 23 and 25, 2008.

NDSU ACM Member Meeting – Invited Talk: “Image Analysis & Procedural Texture Synthesis,” November 16, 2006.

Published and Presented Works

Kendall E. Nygard, Martin Lundell, Dianxiang Xu, and Jonathan Pikalek, "Multi-agent Designs for Ambient Systems," Proceedings of the First International Conference on Ambient Media and Systems, February, 2008.

Altenburg, Karl, M. Hennebry, J. Pikalek and K. Nygard, "Simian: A Multi-agent Simulation Framework for Decentralized UAV Task Allocation," ISAST Transactions on Intelligent Systems, 2008.

Kendall E. Nygard, Karl Altenburg, Harish Mukhami, and Jonathan Pikalek, "Swarm Intelligence for Formation Flight with Autonomous UAVs," Seventh International Conference on Cooperative Control and Optimization, January, 2007.

Jonathan Pikalek, "An Optimization Model for Autonomous Agent Task Planning", Master's Thesis, NDSU Department of Computer Science and Operations Research, 2006.

Kendall E. Nygard, Karl Altenburg, Jingpeng Tang, Doug Schesvold, and Jonathan Pikalek, "Alternative Control Methodologies for Patrolling Assets with Unmanned Air Vehicles," Fifth International Conference on Cooperative Control and Optimization, December, 2004. Accepted as a chapter in D. Grundel, R. Murphey, P. Pardalos, O. Prokopyev, eds., book on Cooperative Control and Optimization, 2006.

Kendall E. Nygard, Karl Altenburg, Jingpeng Tang, Doug Schesvold, and Jonathan Pikalek, "Alternative Control Methodologies for Patrolling Assets with Unmanned Air Vehicles," Fifth International Conference on Cooperative Control and Optimization, December, 2004.

Kendall E. Nygard, Karl Altenburg, and Jonathan Pikalek, "Discrete Optimization for Near Real-time Task Allocation for Unmanned Air Vehicles," Presentation and CD Rom Publication, U. S. Air Force Office of Scientific Research Meetings on Cooperative Control, Caltech, Pasadena, August 9, 2004.

Publications Being Written

Jonathan Pikalek, "Optimization and Heuristic Models for Constrained resource Collection Problems," Doctoral Dissertation, NDSU Department of Computer Science and Operations Research.

Publication Contributions

V.B. Hinsz, "BRUTE: A versatile research platform for studying UAV operator behavior." Invited paper presented at the 2nd annual Human Factors of UAVs Workshop, Mesa, AZ. 2005.

Grants & Scholarships

2005-2008 Recipient of the Astronaut Scholarship Foundation Scholarship.

2005-2008 Recipient of the NDSU Presidential Doctoral Graduate Fellowship.

Awards & Honors

2007-2008 Who's Who Among Students in American Universities and Colleges

Selected for charter membership in Upsilon Pi Epsilon International Honor Society for Computing Sciences

Nominated for 2006 NDSU Gunkelman Award

Placed 3rd in the Spring 2006 NDSU TopCoder programming competition

NDSU College of Mathematics and Science Dean's List 1997 to 2002

Recipient of 1998 Gold Key National Honor Society Sophomore award recognizing scholastic achievement

Boy Scouts of Canada Chief Scout rank (highest Canadian Scouting award)

Boy Scouts of America Star Scout rank

Teaching

NDSU CS Dept: Graduate Teaching Assistant Spring 2005
CSCI 159 Problem Solving in Computer Science
I assumed full responsibility for course including: grading and preparing all lecture materials, assignments and exams.

NDSU CS Dept: Graduate Teaching Assistant Summer 2005
CSCI 159 Problem Solving in Computer Science - Online
I converted previously developed teaching material for online use. I assumed full responsibility for course including: grading and preparing all lecture materials, assignments and exams.

Research

NDSU CS Dept: Graduate Research Assistant May 2002 - Present
NDSU CS Dept: Undergraduate Research Assistant Feb 2001 - May 2002
Research of UAV and autonomous Mars rover mission planning
Duties include:

Independent code testing
Design, implementation, & testing of simulation models, AI models & visualizations
Collaborative team work with faculty and graduate student researchers

NDSU Psych Dept: Graduate Research Assistant May 2003 - Jan 2004

Customization of BRUTE (Basic Research UAV Task Environment)

Duties include:

Modifying source code, initialization files and training scenarios for customized research studies,
& collaborative team work with psychology faculty and post-doc researchers.

Work History

NDSU ITS: Student Consultant Manager Feb 2001 - May 2002

NDSU ITS: Student Consultant Assistant Manager July 2000 - Feb 2001

Supervised management of student consulting program

Duties include:

Cluster policy development & enforcement
Employee policy development & enforcement
Budget research, implementation & bookkeeping
Employee hiring & evaluation
Facilitating team communication

NDSU ITS: Multimedia Administrator Feb 2000 - July 2000

Supervised management of the Service Center multimedia facilities

Duties include:

Policy creation
Product research and budget proposals
Special purpose systems administration

NDSU ITS: Cluster Consultant Feb 1999 - Feb 2000

Duties include:

Network and computer lab maintenance
Printing and plotting
Policy enforcement
Answering user questions & customer service

Service

NDSU Computer Science Facilities Funding Advisory Committee 2006 to present
NDSU Computer Science Department Head Hiring Committee 2006
NDSU Computer Science Department faculty search and hiring committee 2005 to 2007
NDSU Computing & Information Technologies Planning & Goals (CITPG) Committee Student Representative 2003 to 2005

Extracurricular

Member of Upsilon Pi Epsilon International Honor Society for Computing Sciences 2006 to present
Member of Association for Computing Machinery (ACM) 1999 to present
NDSU ACM Member at Large 2004 to 2005
NDSU ACM Chair 2002 to 2003
NDSU ACM Vice-Chair 2001 to 2002
NDSU Ryukyu-te Karate Club 2001 to 2004
Student Government Resident Hall Association Representative for Seim Hall, Fall 1998