

# **47th Annual Midwest Instruction and Computing Symposium**

**(MICS 2014)**

**Verona, Wisconsin, USA  
25 - 26 April 2014**

**ISBN: 978-1-63266-515-7**

**Printed from e-media with permission by:**

Curran Associates, Inc.  
57 Morehouse Lane  
Red Hook, NY 12571



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## Technical Session I 12:30 - 2 PM Friday, April 25

<b>Rattle</b>	<b>Robotics &amp; AI Applications</b>	<b>Session Chair:</b> Aleksandar Tomovic
12:30	<a href="#"><u>Algorithm for Arm Position Reconstruction From Optical Motion Capture Data with Missing or Noisy Data</u></a> <sup>'''3'''</sup>	Meredith Moore, Helene Moorman, James Gao and Jose Carmena
1:00	<a href="#"><u>A Comparative Performance Analysis of filtering and smoothing technique on a Simulated Unmanned Aircraft System</u></a> <sup>'''32'''</sup>	Tamaike Brown, Eunjin Kim and Emanuel Grant
1:30	<a href="#"><u>Path Planning Algorithms For The Robot Operating System</u></a> <sup>'''45'''</sup>	Aleksandar Tomovic

<b>Roll</b>	<b>Computational Biology Tools</b>	<b>Session Chair:</b> Tom O'Neil
12:30	<a href="#"><u>A Comparative Analysis of Popular Phylogenetic Reconstruction Algorithms</u></a> <sup>'''58'''</sup>	Evan Albright, Jack Hessel, Nao Hiranuma, Cody Wang and Sherri Goings
1:00	<a href="#"><u>Accelerating Biomolecular Nuclear Magnetic Resonance Assignment with A*</u></a> <sup>'''74'''</sup>	John Emmons, Joel Venzke, Rachel Davis, Paxten Johnson, Leah Robison, David Mascharka, Timothy Urness, Adina Kilpatrick and Katie Roth
1:30		

<b>Elvis</b>	<b>Computer Systems Education Tools</b>	<b>Session Chair:</b> Shaun Lynch
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12:30	<a href="#">Virtualization in the Academic Computing Infrastructure: The Rise of Boutique Computing</a> <sup>7: 7</sup>	Shaun Lynch
1:00	<a href="#">Operating Systems Learning Environment with VMware</a> <sup>92</sup>	Akalanka Mailewa and Jayantha Herath
1:30	<a href="#">Using Common Linux Commands to Trace the Origins of Potentially Rogue Processes within a Linux Host (Virtual Machine)</a> <sup>7</sup>	Dennis Guster, Martin Smith and Laura Lebentritt

<b>The Beatles</b>	<b>Programming Languages &amp; Tools</b>	<b>Session Chair:</b> Elena Machkasova
12:30	<a href="#">Exploration of parallelization efficiency in the Clojure programming language</a> <sup>9</sup>	Henry Fellows, Joe Einertson and Elena Machkasova
1:00	<a href="#">Developing a Graphical Library for a Clojure-based Introductory CS Course</a> <sup>333</sup>	Paul Schliep, Max Magnuson and Elena Machkasova
1:30	<a href="#">Adopting Node.js and Coffeescript in a Software Design Course</a> <sup>345</sup>	Maxwell Marti

## Poster Session

<a href="#">A Genetic Algorithm for Evolving DNA Sequences</a> <sup>P IC</sup>	Kendra Klocke, Abby Lantzky and Kyle Reimers
<a href="#">Calculating the Melting Temperature of Linker DNA</a> <sup>359</sup>	Louis Joslyn, Adrian Gibson and Thomas Klein
<a href="#">Designing Nanostructures with DNA</a> <sup>362</sup>	Tony Clark, Jamie Ethington and Connor Uhlman

<a href="#">Social Gaming with Chromecast</a> '''367	Corey Feiock, Justin Feiock, Nick Hasz and Peter Bui
<a href="#">Comparing Genetic Programming and Neural Network Representations for Cooperative Agents</a> '''P IC	Emily Johnston, Nao Hiranuma and Sherri Goings

## Technical Session II 2:30 – 4:00 PM Friday, April 25

<b>Rattle</b>	<b>Algorithms and Tools</b>	<b>Session Chair:</b> Timothy Urness
2:30	<a href="#">Multicast Network Coded Flow in Grid Graphs</a> '''36:	John Gormley and Eric Manley
3:00	<a href="#">Exploring Alternative Clustering for PIY Source Code Detection</a> '''37;	Pa Woua Vang and James Schnepf
3:30	<a href="#">A Visualization Program for Subset Sum Instances</a> '''395	Thomas O'Neil and Abhilasha Bhatia

<b>Roll</b>	<b>AI and Machine Learning</b>	<b>Session Chair:</b> Nic McPhee
2:30		
3:00	<a href="#">Applying Machine Learning to Energy Usage</a> '''3: 5	Andrew Latterner
3:30	<a href="#">Analysis of Genetic Programming Ancestry Using a Graph Database</a> '''3; 7	David Donatucci, Kirbie Dramdahl and Nic McPhee

<b>Elvis</b>	<b>Software Engineering/Design Patterns</b>	<b>Session Chair:</b> Kasi Periyasamy
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2:30	<a href="#">A Requirements Engineering Tool Based on Use Cases</a> <sup>432</sup>	Jenny Gijo and Kasi Periyasamy
3:00	<a href="#">A Proposed Method for Achieving Increased Software Maintainability Through Documentation</a> <sup>444</sup>	Justin Huber and Hassan Reza
3:30	<a href="#">Design and Implementation of Infinity Research Assistant</a> <sup>45:</sup>	Nick Oliver and Yi Liu

<b>The Beatles</b>	<a href="#">Panel: Nifty Assignments and Tools</a> <sup>469</sup>	<b>Moderator:</b> Stuart Hansen
2:30	<a href="#">Stuart Hansen (moderator) UW - Parkside</a> Kristine J. Peters Ripon College	
3:00	Teresa Nickeson University of Dubuque <a href="#">Tim Gegg-Harrison and Nicole Anderson Winona State University</a>	
3:30	David R. Musicant Carleton College Dean Stevens and Randy Campbell Morningside College Samantha S. Foley UW – La Crosse	

## Keynote: Josh Brauer

Mobile applications have become an essential part of our daily lives, and healthcare is no exception. In this talk, Josh will discuss many aspects of mobile app development along with some of the core challenges that face today's mobile developers both inside and outside of healthcare. He'll also spend time covering some of the key differences in developing mobile apps for the two most predominant mobile platforms - iOS and Android

## Saturday, April 26

Technical Session III 8:30 – 10:00 AM Saturday,  
April 26

<b>Rattle</b>	<b>Web</b>	<b>Session Chair:</b> Kristine Peters
8:30	<a href="#">Demonstrating a Device Fingerprinting System</a> ""494	Michael Rausch, Andrew Bakke, Suzanne Patt, Elizabeth Wegner and David Scott
9:00	<a href="#">Searching for Indicators of Device Fingerprinting in the JavaScript Code of Popular Websites</a> ""4: 6	Michael Rausch, Nathan Good and Chris Hoofnagle
9:30	<a href="#">Evaluation and Implementation of machine learning techniques in usability testing for web sites</a> ""4; 7	Christoffer Korvald, Eunjin Kim and Hassan Reza

<b>Roll</b>	<b>3D Modeling</b>	<b>Session Chair:</b> Chris Johnson
8:30	<a href="#">Classifying Objects from a 3D Model</a> ""529	Adrian Rossing and Kayla Bonnstetter
9:00	<a href="#">Global Orientation for Feature Matching in Corresponding Planes</a> ""534	Stefan Mellem, Thomas Scott and Ian Zewiske
9:30	<a href="#">Collaborative Dataset Building: Action-Based Modification and File-Based Data Management</a> ""53;	Connor Wray, Shane Allen and Armaan Bindra

<b>Elvis</b>	<b>Computer Science Education</b>	<b>Session Chair:</b> Noel Petit
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8:30	<a href="#">Hacking as a Game</a> <sup>54</sup> :	Terry Letsche
9:00	<a href="#">How We're Changing Computer Science Education and How You Can Help</a> <sup>55</sup> ;	Jeremy Straub, Scott Kerlin and Tom Stokke
9:30	<a href="#">Teaching Computers in Tanzania</a> <sup>567</sup>	Noel Petit

<b>The Beatles</b>	<b>Computer Science Pedagogy</b>	<b>Session Chair:</b> Teresa Nickeson
8:30	<a href="#">An Experiential Education Approach to Teaching Software Project Management</a> <sup>573</sup>	Jeremy Straub and Scott Kerlin
9:00	<a href="#">Marshalling Technology for Learning</a> <sup>57</sup> ;	Curt Hill
9:30	<a href="#">Data Analytics Experiential Learning</a> <sup>588</sup>	Teresa Nickeson and Nicholas Rivera

## Technical Session IV 10:30 AM - Noon Saturday, April 26

<b>Rattle</b>	<b>Web Applications</b>	<b>Session Chair:</b> Peter Bui
10:30	<a href="#">Dark Nebula: Using the Cloud to Build a RESTful Web Service</a> <sup>5</sup> : 2	John Fisher, Robert Fisher and Peter Bui
11:00	<a href="#">A Web Portal For An Animation Render Farm</a> <sup>5</sup> ; 7	John Rankin, Travis Boettcher and Peter Bui
11:30	<a href="#">On Ramp to Parallel Computing</a> <sup>62</sup> :	Zackory Erickson and Samantha Foley



<b>Roll</b>	<b>Miscellaneous</b>	<b>Session Chair:</b> Mark Fienup
10:30	<a href="#">Parallel Computing in the CS Curriculum via the Computer Architecture Course</a> '''645	Mark Fienup
11:00	<a href="#">Ontology based Knowledge Model Research</a> '''652	Fei Wang and Hao Fan
11:30	<a href="#">Color Characterization and Calibration of an External Display</a> '''65:	Jonathan Sandness, Austin Martin and Andrew Crocker

<b>Elvis</b>	<b>Misc. Computer Science Education</b>	<b>Session Chair:</b> J. Philip East
10:30	<a href="#">Managing Group Projects with Visual Studio Online</a> '''66:	Michael Haugrud
11:00	<a href="#">Thinking about Conditional Thinking</a> '''682	Stephen Hughes and J. Philip East
11:30	<a href="#">Satellites and Computer Communication in the Classroom</a> '''68;	Noel Petit

<b>The Beatles</b>	<b>3D Models and Cameras</b>	<b>Session Chair:</b> Olaf Hall-Hoft
10:30	<a href="#">Large Scale 3D Modeling in Real Time</a> '''6: 2	Margaret Wanek, Tommy Markley and Douglas Binder
11:00	<a href="#">Resolving Matched Stereoscopic Surfaces into a Three-Dimensional Model</a> '''6: :	Stephen Lee, Guanlun Mu and Sam Bedell

11:30	<a href="#">Error Minimization in 3D Model Reconstruction Using Sparse Bundle Adjustment and the Levenberg-Marquardt Algorithm on Stereo Camera Pairs</a> ""6; 8	Luke Bonde, Allison Brumfield and Ye Yuan
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<b>Hans Christian Andersen</b>	<b>Mobile Applications</b>	<b>Session Chair:</b> Mao Zheng
10:30	<a href="#">Automatically Adjust The Smart Phone</a> ""733	Zhenyu Zhang and Mao Zheng
11:00	<a href="#">Using Android Fragments in A Campus Guide System</a> ""73:	Boheng Wei, Xi Yan and Mao Zheng
11:30	<a href="#">Essential Android Technologies and Google Maps APIs for Location-Based Services</a> ""748	Wen-Chen Hu, Naima Kaabouch, Hung-Jen Yang and Xiwei Wang