

50th Annual Midwest Instruction and Computing Symposium (MICS 2017)

La Crosse, Wisconsin, USA
7 - 8 April 2017

ISBN: 978-1-5108-4035-5

Printed from e-media with permission by:

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



Some format issues inherent in the e-media version may also appear in this print version.

Copyright© (2017) by Midwest Instruction & Computing Symposium
All rights reserved.

Printed by Curran Associates, Inc. (2017)

For permission requests, please contact Midwest Instruction & Computing Symposium
at the address below.

Midwest Instruction & Computing Symposium
University of Wisconsin
204E North Hall
410 S 3rd St.
River Falls, WI 54022

Phone: (715) 425-0660
Fax: (715) 425-0657

east@cs.uni.edu

Additional copies of this publication are available from:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: 845-758-0400
Fax: 845-758-2633
Email: curran@proceedings.com
Web: www.proceedings.com

Midwest Instruction and Computing Symposium *50th Anniversary*



April 07–08, 2017
University of Wisconsin–La Crosse
Department of Computer Science

<http://faculty.cs.uwlax.edu/~mics2017/>



Session A	Friday, April 07	12:30 pm – 1:30 pm
3110 UWL Student Union	Chair: Mao Zheng	
12:30 pm	Security Concerns of Registers in Linux Hosts:1 Using Debug to Find Memory Addresses of Sensitive Data	Hazem Farra, Erich Rice, and Dennis Guster

1:00 pm	Application Level Memory Management Strategies Via the 'Garbage Collector': Performance and Security Ramifications16	Abdul Raqeeb, Dennis Guster, and Mark Schmidt
---------	--	---

3120 UWL Student Union Chair: Marty Allen		
12:30 pm	Case Study: Information Security Risk Assessment for a Small Healthcare Clinic Using the Security Risk Assessment Tool Provided by HealthIT.gov31	Scott Lisbon and Erich Rice
1:00 pm	On the Use of Vulnerable Code in Chromium, the Base of Google Chrome: A Case Study46	Melissa Sarnowski, Saleh Alnaeli, Derrek Larson, Keith Ecker, Zachary Blasczyk, and Mark Hall

3130 UWL Student Union Chair: Tom Gendreau		
12:30 pm	Flipping the Classroom: A Case Study53	Randy Campbell and Dean Stevens
1:00 pm	Tackling CS education in K-12: Implementing a Google CS4HS Grant Program in a Rural Underserved Area62	Sherri Harms

3314 UWL Student Union Chair: Jason Sauppe		
12:30 pm	Practicing the Perceptron: Introducing Data Mining to the CS2 Classroom70	François Neville
1:00 pm	On Teaching Big Data Query Languages80	Thanaa Ghanem

Poster/Demo Session	Friday, April 07	1:30 pm – 2:30 pm
----------------------------	-------------------------	--------------------------

Bluffs Hall, 2nd Floor, UWL Student Union		
	Root Wizard93	Seth Gilbert and Chris Johnson
	Type Tetris94	Daniel Trewin and Chris Johnson
	Ultimate Cod Fishing: An Interactive Game for Learning Computer Science	Adrian Abundez-Arce and Chris Johnson95
	A Scalable Machine Learning Approach for Social News Censorship Prediction96	Andrew Quaschnick
	Boolean Logic: "Boolean Bomb Squad"101	Emma Fischer and Chris Johnson
	Reinforcement Learning for Atari 2600 (JStella Learning Environment) ...103	Ian Cichy
	Student Grade Reporter107	Christian Reese
	Educational Videos to Teach Parallel Computing on the Raspberry Pi109	Margaret Zimmermann, Jesus Caballero Jr., and Richard Brown

Session B	Friday, April 07	2:30 pm – 4:00 pm
------------------	-------------------------	--------------------------

3105 UWL Student Union Chair: Tom Gendreau		
2:30 pm	The Structural Analysis and Logical Controller Abstraction of Curator Software120	Alexander Staebell and Yi Liu
3:00 pm	Improving Clojure Error Messages for Programming Novices with clojure.spec129	Myeongjae Song and Elena Machkasova

3110 UWL Student Union	Chair: Tom Gibbons
-------------------------------	---------------------------

2:30 pm	A Many-key Image Encryption Method Using the Lorenz System141	Ronald Marsh and Scott Kerlin
3:00 pm	A Secure QR Code Scheme152	Julian Brackins and Mengyu Qiao

3120 UWL Student Union Chair: Chris Johnson		
2:30 pm	Exploring World's Interest in Paralympics through Twitter ...166	Venkata Sravya Kalla and Thanaa Ghanem
3:00 pm	Phishing for Users177	Sean Stahly, Keathan Fertig, and Matt Miller

3130 UWL Student Union Chair: John Maraist		
2:30 pm	Blending Computer Science and Liberal Arts in a Multi-Disciplinary Graphics Design Program185	Donald Heier and Maggie Erickson
3:00 pm	Developing an Interactive GUI dashboard for the Raht Racer ..193	Erik Reis, Josh Wilford, Hamna Zahid, Arsene Foka, and Omar Al-Azzam

3314 UWL Student Union Chair: Kasi Periyasamy		
2:30 pm – 4:00 pm	Panel: Software Engineering Education - Present and Future ...203	Kasi Periyasamy, Zaid Altahat, Kenny Hunt, Dave Riley, Derek Riley, and Yan Shi

Session C	Saturday, April 08	9:00 am – 10:00 am
------------------	---------------------------	---------------------------

3110 UWL Student Union Chair: Marty Allen		
9:00 am	Data Encryption Device using Radioactive Decay and a Hybrid Quantum Encryption Algorithm208	Anthony Kunkel, Karthik Paidi, and Dennis Guster
9:30 am	JavaScript Callbacks: Introducing Concurrency through Callbacks and Closures219	Kenny Hunt

3120 UWL Student Union Chair: Kasi Periyasamy		
9:00 am	Defragmenting Textual Data by Leveraging the Syntactic Structure of the English Language229	Nathaniel Hayes
9:30 am	Parallelism and replicability: Intel Xeon Phi and protein database querying with the Smith-Waterman algorithm .243	Jacob Caswell, Brianna Cunniff, Jonathan Lenz, and Phil Nadolny

3130 UWL Student Union Chair: Andrew Anda		
9:00 am	MST-Based and Optimal Grammar-Based (0,1)-Matrix-Vector Product Algorithms257	Jeff Witthuhn and Andrew Anda
9:30 am	Augmenting the Computing Ethics Course271	Andrew Anda

3310 UWL Student Union Chair: Mark Fienup		
9:00 am – 10:00 am	Birds of a feather session: suggested topics: <ul style="list-style-type: none"> 1. Pedagogy: flipped classrooms, online instruction, etc. 2. Enrollment, retention, hiring of faculty in CS 3. The future of MICS 	

Session D	Saturday, April 08	10:30 am – 11:30 am
------------------	---------------------------	----------------------------

3110 UWL Student Union			Chair: Marty Allen		
10:30 am	Applying Convolutional Neural Networks to Per-pixel Orthoimagery Land Use Classification281	Jordan Goetze			
11:00 am	Object Classification using Deep Convolutional Neural Networks290	Nicholas Boddy			

3120 UWL Student Union			Chair: Mao Zheng		
10:30 am	Job Board: A Web-Based Scheduler297	Cameron Ario and Kasi Periyasamy			
11:00 am	Using React Native in an Android App309	Yifan Gu, Chaohui Xu, and Mao Zheng			

3130 UWL Student Union			Chair: John Maraist		
10:30 am	High Performance Computing with 10GB Networking at a Small Institution315	Rachel Frantsen, Stephen Akers, Eric Oseid, and Richard Brown			
11:00 am	Managing the Academic Computing Infrastructure in the Age of Automation326	Shaun Lynch			

3310 UWL Student Union			Chair: Samantha Foley		
10:30 am	Introduction to Parallel Processing with an Eight-Node Raspberry Pi Cluster337	Bob Laskowski, Greg Dorr, Drew Hagen, and Don Vo			
11:00 am	Serving the Underserved	Curt Hill			