

## Erik Allyn Krohn

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### CONTACT INFORMATION

Computer Science Department  
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### EDUCATION

#### **University of Iowa, Iowa City, IA**

Ph.D., Computer Science, December 2009

- Thesis Title: *Surveilling Roads and Protecting Art*
- Advisor: *Professor Kasturi Varadarajan*
- Area of Study: *Algorithms/Computational Geometry*

M.S., Computer Science, December 2007

#### **University of Wisconsin - La Crosse, La Crosse, WI**

B.S., Computer Science, May 2004

- Minor in Mathematics
- Minor in Physics with an Astronomy Emphasis

### PROFESSIONAL EXPERIENCE

#### **University of Wisconsin - Oshkosh, Oshkosh, WI**

*Associate Professor*

**September 2016 to present**

*Assistant Professor*

**September 2010 to August 2016**

- Courses Taught:
  - CS142 - Elementary Programming in Visual Basic (3 sections)
  - CS221 - Object-Oriented Design and Programming I (6 sections)
  - CS262 - Object-Oriented Design and Programming II (4 sections)
  - CS271 - Data Structures (4 sections)
  - CS321 - Algorithms (6 sections)
  - CS331 - Programming Languages (3 sections)
  - CS344 - Mobile Application Development (1 section)
  - CS346 - Web Software Development (2 sections)
  - CS431 - Compilers (2 sections)
  - CS480 - Topics in Computer Science, Algorithms (1 section)
  - CS480 - Topics in Computer Science, Mobile Software Development (1 section)
  - DS730 - Big Data: High Performance Computing (3 sections)
  - MATH212 - Mathematics for Computer Science (2 sections)

*Academic Director*

**July 2014 to present**

- I am the campus representative for a collaborative Master of Data Science degree.
- Assisted in the planning stages of the degree to determine course offerings, topic coverage, prerequisites, etc.
- I am responsible for ensuring Oshkosh is adequately staffed for the courses for which we are responsible.
- I provide academic advising along with reviewing and approving credit for prior learning.

**University of Iowa, Iowa City, IA**

*Visiting Assistant Professor*

**January 2010 to May 2010**

- Courses Taught:
  - 22C:005 - Introduction to Computer Science (1 section)
  - 22C:109 - Programming with C++ (1 section)

*Teaching Assistant*

**August 2004 to December 2009**

- Sole Responsibility
  - 22C:001 - Computer Literacy (4 sections)
  - 22C:109 - Programming with C++ (3 sections)
- Discussion Instructor
  - 22C:016 - Computer Science I: Fundamentals (2 sections)
  - 22C:021 - Computer Science II: Data Structures (2 sections)
  - 22C:104 - Introduction to Informatics (1 section)
- Grader
  - 22C:031 - Algorithms (1 section)

*Research Assistant*

**January 2007 to December 2007**

- Advisor: Professor Kasturi Varadarajan
- Investigated several geometric set covering problems. The majority of the time was spent working on the art gallery problem and terrain guarding problem.
- Studied other problems including clustering problems and target tracking problems.

**Mount Mercy University, Cedar Rapids, IA**

*Adjunct Instructor*

**January 2009 to May 2010**

- CS226 - Programming in Visual Basic (1 section)
- CS227 - Programming in C++ (1 section)
- CS389 - Algorithm Analysis (1 section)

**Malmö University, Malmö, Sweden**

*Visiting Researcher*

**August 2011 to September 2011**

- Spent part of the summer working with Professor Bengt Nilsson.
- Investigated several geometric set covering problems. Spent the majority of the time studying the art gallery problem where the polygon is monotone.

*Visiting Researcher*

**May 2008 to June 2008**

- Spent part of the summer working with Professor Bengt Nilsson.
- Investigated several geometric set covering problems. Spent the majority of the time studying the art gallery problem and terrain guarding problem.

**Kirkwood Community College, Cedar Rapids, IA**

*Instructor*

**August 2007 to January 2009**

- Taught many types of courses to non-traditional students.
- Topics included PHP, MySQL, C++, C#, HTML and Microsoft Office.
- Classes were generally 1-3 weeks in length and included many hands-on activities.
- Advised other instructors on effective ways to teach non-traditional students.

RESEARCH INTERESTS	Theory and Algorithms. More specifically, computational geometry problems, art gallery problems, terrain guarding problems. Also interested in computer science education, compilers and programming languages.
AWARDS	<p>American Mathematical Society</p> <ul style="list-style-type: none"> <li>• Invited to participate at the Discrete and Computational Geometry workshop held at Snowbird, Utah in June, 2012.</li> </ul> <p>University of Wisconsin - Oshkosh</p> <ul style="list-style-type: none"> <li>• Small Grant, to travel to San Antonio to complete research with Professor Matt Gibson, January 2015, January 2016.</li> <li>• Off-Campus Grant, to attend a special workshop on algorithms at SIGCSE 2014.</li> <li>• Faculty Development Research Grant, Summer 2011, Summer 2012, Summer 2013.</li> </ul> <p>University of Iowa</p> <ul style="list-style-type: none"> <li>• Tuition Scholarship, 2004 to 2009</li> <li>• Graduate College Summer Research Fellowship, 2008</li> </ul> <p>Malmö University</p> <ul style="list-style-type: none"> <li>• Visiting Researcher Scholarship, 2008 Received full funding from Professor Bengt Nilsson to do research in Sweden for part of the summer.</li> </ul>
PUBLICATIONS	<p>The VC-Dimension of Visibility on the Boundary of a Simple Polygon. (with Matt Gibson and Qing Wang). ISAAC 2015.</p> <p>A Characterization of Visibility Graphs for Pseudo-Polygons. (with Matt Gibson and Qing Wang). ESA 2015.</p> <p>On the VC-Dimension of Monotone Polygons. (with Matt Gibson and Qing Wang). CCCG 2014.</p> <p>The Complexity of Guarding Monotone Polygons. (with Bengt Nilsson). CCCG 2012.</p> <p>The Complexity of Guarding Terrains. (with James King.) SODA 2010.</p> <p>An Approximation Scheme for Terrain Guarding. (with Matt Gibson, Gaurav Kanade and Kasturi Varadarajan). In RANDOM-APPROX 2009.</p> <p>Improved Approximations for Guarding 1.5-Dimensional Terrains. (with Khaled Elbassioni, Domagoj Matijević, Julián Mestre and Domagoj Ševerdija). STACS 2009.</p> <p>On Metric Clustering to Minimize Sum of Radii. (with Matt Gibson, Gaurav Kanade, and Kasturi Varadarajan). SWAT 2008.</p> <p>On Clustering to Minimize Sum of Radii. (with Matt Gibson, Gaurav Kanade, Imran Pirwani, and Kasturi Varadarajan). SODA 2008.</p>
JOURNAL PUBLICATIONS	<p>Guarding Terrains via Local Search. (with Matt Gibson, Gaurav Kanade, and Kasturi Varadarajan). JoCG, Volume 5, Number 1. 2014.</p> <p>Approximate Guarding of Monotone and Rectilinear Polygons. (with Bengt Nilsson). Algorithmica, Volume 66, Number 3. 2013.</p>

On Clustering to Minimize the Sum of Radii. (with Matt Gibson, Gaurav Kanade, Imran Pirwani, and Kasturi Varadarajan). SIAM Journal on Computing, Volume 41, Issue 1. 2012.

Terrain Guarding is NP-Hard. (with James King). SIAM Journal on Computing, Volume 40, Issue 5. 2011.

Improved Approximations for Guarding 1.5-Dimensional Terrains. (with Khaled M. Elbassioni, Domagoj Matijević, Julián Mestre, Domagoj Ševerdija). Algorithmica, Volume 60, Number 2. 2011.

On Metric Clustering to Minimize the Sum of Radii. (with Matt Gibson, Gaurav Kanade, Imran Pirwani, and Kasturi Varadarajan). Algorithmica, Volume 57, Number 3. 2010.

Clustering to Minimize the Sum of Radii. (with Matt Gibson, Gaurav Kanade, Imran Pirwani, and Kasturi Varadarajan). Special issue of Algorithmica for SWAT 2008.

TECHNICAL SKILLS Languages: C, C++, C#, Java, JavaScript, Lisp, ML, Perl, PHP, Prolog, R, SQL, and Visual Basic, among others.

Applications: T<sub>E</sub>X, L<sup>A</sup>T<sub>E</sub>X, Hadoop, Microsoft Office, and other common productivity packages for Windows and Linux platforms.

Operating Systems: Microsoft Windows (most versions), UNIX, Apple OS, iOS, Android, and Linux (RedHat, Mint, and Ubuntu, among others).

PROFESSIONAL  
MEMBERSHIP

Special Interest Group on Computer Science Education (SIGCSE)  
Association for Computing Machinery (ACM)