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Education:

Ph.D. Computer Science *May 2008*
University of Iowa, Iowa City, Iowa
Thesis Title: “*Algorithms in Wireless Networks*”
Supervisor: Professor Sriram V. Pemmaraju

B.S. Computer Science *Dec. 1998*
University of Iowa, Iowa City, Iowa

Research Interests:

Distributed Computing, Wireless Networks, Approximation Algorithms, Computational Geometry, Graph Theory.

Awards and Honors:

- [5/08] University of Iowa Graduate College Summer 2008 Dissertation Fellowship.
- [6/06] ACM-SIAM Student Travel Award (\$500) to participate in SIAM Conference on Discrete Mathematics, June 25–28, 2006, University of Victoria, Victoria, B.C., Canada.

Publications:

Journal:

- [2] Clustering to Minimize the Sum of Radii. (with Matt Gibson, Gaurav Kanade Erik Krohn, and Kasturi Varadarajan.) *Invited to special issue of Algorithmica for SWAT 2008.*
- [1] Topology Control and Geographic Routing in Realistic Wireless Networks. (with Kevin Lillis and Sriram V. Pemmaraju.) *Invited to special issue of Ad Hoc & Sensor Wireless Networks: An International Journal.*

Conference:

- [8] On Metric Clustering to Minimize Sum of Radii. (with Matt Gibson, Gaurav Kanade, Erik Krohn, and Kasturi Varadarajan.) In *SWAT 2008, to appear.*
- [7] On Clustering to Minimize Sum of Radii. (with Matt Gibson, Gaurav Kanade, Erik Krohn, and Kasturi Varadarajan.) In *SODA 2008*, pages 819-825.
- [6] Good Quality Virtual Realization of Unit Ball Graphs. (with Sriram V. Pemmaraju.) In *ESA '07: Proceedings of fifteenth Annual European Symposium on Algorithms*, pages 311-322, Heidelberg, Germany, 2007. Springer-Verlag.
- [5] Topology Control and Geographic Routing in Realistic Wireless Networks. (with Kevin Lillis and Sriram V. Pemmaraju.) In *Adhoc-Now '07: Proceedings of sixth International Conference on AD-HOC Networks & Wireless*, pages 15-31, Heidelberg, Germany, 2007. Springer-Verlag.
- [4] Energy conservation via domatic partitions. (with Sriram V. Pemmaraju.) In *MobiHoc '06: Proceedings of the seventh ACM international symposium on Mobile ad hoc networking and computing*, pages 143–154, New York, NY, USA, 2006. ACM Press.

- [3] Oriented Edge Colorings and Link Scheduling in Sensor Networks. (with Ted Herman and Sriram V. Pemmaraju.) In *SENSORWARE/COMSWARE '06: Proceedings of the first International Conference on Communication Software and Middleware*, New Dehli, India, 2006.
- [2] Introduction to the Non-Rigid Image Registration Evaluation Project. (with Gary Christensen, Xijuan Geng, Jon Kuhl, Joel Bruss, Thomas Grabowski, Michael Vannier, John Allen, and Hanna Damasio.) In *WBIR '06: Proceedings of Biomedical Image Registration*, pages 128–135, Heidelberg, Germany, 2006. Springer-Verlag.
- [1] A Composite Stabilizing Data Structure. (with Ted Herman.) In *WSS '01: Proceedings of the fifth International Workshop on Self-Stabilizing Systems*, pages 167–182, Heidelberg, Germany, 2001. Springer-Verlag.

Talks/Presentations:

- [3] *Nov. 2007:* Good Quality Virtual Realization of Unit Disk Graphs. *55th. Midwest Theory Day.* University of Chicago, Chicago, Illinois, U.S.A.
- [2] *Oct. 2007:* Good Quality Virtual Realization of Unit Disk Graphs. *15th. Annual European Symposium on Algorithms.* Eilat, Israel. (Tele-talk due to travel/visa restrictions.)
- [1] *June 2006:* Extending the Lifetime of Wireless Networks while Ensuring Coverage. *2006 SIAM Conference on Discrete Mathematics.* Victoria, B.C., Canada.

Professional Service:

Refereeing: *Conferences:* Symposium on Computational Geometry (SoCG), On Principles of Distributed Computing (OPODIS), International Conference on Distributed Computing and Networking (ICDCN), Symposium on Discrete Algorithms (SODA).

Professional Membership:

Society for Industrial and Applied Mathematics (SIAM); Association for Computing Machinery (ACM); European Association for Theoretical Computer Science (EATCS).

Relevant Work Experience:

Center for Computer Aided Design, University of Iowa, Iowa City, Iowa

Research Assistant

Aug. 2007 – present

Modeling predictive dynamics and posture for a Digital Human involved in various tasks, for the Santos Project, Virtual Soldier Research.

Network Dynamics and Simulation Science Lab., Virginia Tech., Blacksburg, Virginia

Research Intern

June 2007 – Aug. 2007

Summer research intern working for Dr. Anil Vullikanti for work on algorithmic problems in adhoc wireless networks.

Dept. of Elec. & Comp. Engn., University of Iowa, Iowa City, Iowa

Research Assistant

Aug. 2005 – May 2007

Work involves designing and developing Non-rigid image registration evaluation software that allows researchers to evaluate image registration algorithms.

Dept. of Computer Science, University of Iowa, Iowa City, Iowa

Teaching Assistant

Aug. 2000 – May 2005

22C:169 Computer Security. Basic course in technology pertaining to computer security.

22C:135 Theory of Computation. Basic course in automata theory.

22C:020 Computer Science II. Basic programming in Java.

22C:178 Computer Communications. Basic networking course.

22C:096 Advanced Java. Advanced course in Java Programming.

22C:151 Computer Graphics. Graphics using OpenGL.
22C:030 Computer Science III. Data Structures in C++.
22C:116 Advanced Operating Systems. Graduate level O/S course.
22C:030 Computer Science III. Data Structures in C++.

Dept of Computer Science, University of Iowa, Iowa City, Iowa

Research Assistant

Jan. 2000 – Aug. 2000

Work involved designing data structures that are resilient to data corruption due to transient failures.

National Advanced Driving Simulator

University of Iowa, Dept of Computer Science, Iowa City, Iowa

Programmer

Jan. 1999 – Jan. 2000

Work involved designing and developing real-time software to be used to driving a ground vehicle simulator.

Languages and Tools:

C, C++, Java, SmallTalk, Prolog, PASCAL, FORTRAN, Xlib, Matlab, Mathematica, OpenGL, Perl, csh, ksh, Miranda, MC-68000 assembly, L^AT_EX, GLUT, Alias, OpenFlight API, BMRT shading language, and MultiGen.

References:

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Anil Vullikanti

Assistant Professor
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Madhav V. Marathe

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