

Hong Wang

Work Address:

The University of Toledo
Engineering Technology Dept
MS #402

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Working Experience

Associate Professor Aug 2013 - Present
Assistant Professor (Tenure Track), Aug 2007 – Aug. 2012
Program of Computer Science and Technology
Department of Engineering Technology
The University of Toledo

Visiting Assistant Professor, Aug 2006 – Aug 2007
Program of Computer Science Technology
Department of Engineering Technology
The University of Toledo

Education

Master of Arts, May 2002
Kent State University, Kent OH
Major: Computer Science

PhD, Dec 2006
Dissertation: Implementing a Multiple
Associative (MASC) Processor
Kent State University, Kent OH
Major: Computer Science

Research Interests

Ongoing Research Interests:

Data Science and Analytics – I recently switched my research focus on Data Science. Collaborated with to analyze large US crime datasets combined with local census and spatial data to find social or spatial relationship patterns. Participated in kidney transplant survival analysis using machine learning.

Computer Science Education – Continuous research efforts in improving STEM education especially in online educational environment.

Past research interests:

Parallel computing applications including image processing and bioinformatics
Robotics, UAV navigation
Secure Robot Communication

Publications

Journal:

- [1] Shahrukh Ashraf, Priyanka Aggarwal, Praveen Damacharla, Hong Wang, Ahmad Y Javaid, and Vijay Devabhaktuni, "A low-cost solution for unmanned aerial vehicle navigation in a global positioning system–denied environment," *International Journal of Distributed Sensor Networks*, Volume: 14, Issue: 6, 2018 (doi: 10.1177/1550147718781750)
<http://journals.sagepub.com/doi/10.1177/1550147718781750>
- [2] Srujana Adusumilli, Deepak Bhatt, Hong Wang, Vijay Devabhaktuni, Prabir Bhattacharya "A novel hybrid approach utilizing principal component regression and random forest regression to bridge the period of GPS outages," *Neurocomputing* 166: 185-192. March 2015
<http://www.sciencedirect.com/science/article/pii/S0925231215004555>
- [3] Srujana Adusumilli, Deepak Bhatt, Hong Wang, Prabir Bhattacharya, Vijay Devabhaktuni "A low-cost INS/GPS integration methodology based on random forest regression," *Expert Systems With Applications* vol. 40 issue 11 September 1, 2013. p. 4653-4659,
<http://www.sciencedirect.com/science/article/pii/S0957417413001164>
- [4] Xinyu Guo, Hong Wang and Vijay Devabhaktuni "A Systolic Array-Based Parallel Architecture for the BLAST Algorithm on FPGA," *International Scholarly Research Network (ISRN) Bioinformatics* 2012. Paper URL:
<http://www.isrn.com/journals/bioinformatics/2012/195658/>
- [5] Vijay Varada, Hong Wang, Vijay Devabhaktuni, "Sound Source Localization Employing Polar Directivity Patterns of Bidirectional Microphones" *International Journal of Modern Engineering (IJME)*, Fall/Winter 2010, Volume 11, No. 1
- [6] H. Wang, "Teaching CS1 with Python GUI Game Programming". *IAENG Transactions on Engineering Technologies*, Volume 4, P 253 – 260, October 2009

Conference and Workshop Publications:

1. Hong Wang, "Implementing Cost Effective Robotic Arm Capstone Projects," to appear the 14th International Conference on Frontiers in Education (FECS) 2018, Las Vegas
2. Hong Wang, "Improving an online STEM course through Quality Matters Certification– A case study," to appear 2018 ASEE Annual Conference & Exposition, Salt Lake City.
3. Bhavana Daddala, Hong Wang and Ahmad Y. Javaid, "Design and Implementation of a customized encryption algorithm for Authentication and Secure Communication between devices," at 2017 IEEE National Aerospace and Electronics Conference (NAECON), Dayton, OH, June 27-30, 2017 doi: 10.1109/NAECON.2017.8268781 ([Online](#))

4. H. Wang, " Integrating Modern Software Tools into Online Database Course," in Proceedings of the 2017 International Conference on Frontiers in Education: Computer Science and Computer Engineering (FECS), July 17-20, 2017, Las Vegas, USA
5. Rishabh Chauhan, Hong Wang, and Ahmad Javaid, Mansoor Alam "Modified RSSI Fingerprinting Algorithm with Reliability Factor for Wi-Fi based Indoor Navigation System," in 6th International Conference on Sensor Networks, February 19-21, 2017, Porto, Portugal.
6. Long Chang, Hong Wang, Lingfeng Wang; "Fault Detection and Diagnosis of an HVAC system using Artificial Immune Recognition System," Power and Energy Engineering Conference (APPEEC), 2013 IEEE PES Asia-Pacific
7. J Zhao; H Wang, "An Efficient Direct Torque Control Based on Fuzzy Logic Technique", The 2012 International Conference on Genetic and Evolutionary Methods (GEM), Las Vegas, USA, 2012
8. X Guo; H. Wang; V.K. Devabhaktuni, "Design of a FPGA-Based Parallel Architecture for BLAST Algorithm with Multi-hits Detection" Information Technology: New Generations (ITNG), Las Vegas, USA, 2011, pp. 689 - 694
9. Yichi Zhang, Weiqing Sun, Lingfeng Wang, Hong Wang, Robert C. Green II, and Mansoor Alam "A Multi-Level Communication Architecture of Smart Grid Based on Congestion Aware Wireless Mesh Network" 2011 NORTH AMERICAN POWER SYMPOSIUM (NAPS 2011) Boston, MA, Aug. 4-6, 2011.
10. D. Solarek, A. Rioux, Hong Wang, T. Evans, W. Sun, "INTEGRATING COMPUTER SCIENCE AND ENGINEERING TECHNOLOGY TO IMPLEMENT AN ABET ACCREDITED PROGRAM", to appear in American Society for Engineering Education, June, 2010. Louisville, Kentucky.
11. H. Wang, "Engaging students with game programming in Python". The Proceedings of World Congress on Engineering and Computer Science (WCECS 2009), Oct. 20-22, San Francisco, CA
12. H. Wang, "From C to Python: Impact on Retention and Student Performance" in Proceedings of the 2009 International Conference on Frontiers in Education: Computer Science and Computer Engineering (FECS), Las Vegas, USA, 2009, pp. 170-174.
13. "Implementing a Multiple-Instruction-Stream Associative MASC Processor", Hong Wang and Robert A. Walker, in Proceedings of the 18th international conference on Parallel and Distributed Computing Systems (PDCS'06) ,November 2006, Dallas, Texas, pp. 460-465.
14. "Solving the Longest Common Subsequence (LCS) Problem using the Associative ASC Processor with Reconfigurable 2D Mesh", Viridi Sabegh Singh , Hong Wang, and Robert A. Walker, in Proceedings of the 18th international conference on Parallel and Distributed Computing Systems(PDCS'06) , November 2006, Dallas, Texas, pp. 454-459.
15. "A Scalable Pipelined Associative SIMD Array with Reconfigurable PE Interconnection Network for Embedded Applications", Hong Wang and Robert A. Walker, in Proceedings of the 17th international conference on Parallel and Distributed Computing Systems (PDCS'05), November 2005, Phoenix, Arizona, pp. 667-673.

16. "A Scalable Associative Processor with Applications in Database and Image Processing", Hong Wang, Lei Xie, Meiduo Wu, and Robert A. Walker, in Proc. of the 18th International Parallel and Distributed Processing Symposium (Workshop in Massively Parallel Processing), abstract on page 259, full text on CDROM, Santa Fe, New Mexico, April 2004.
17. "Implementing a Scalable ASC Processor", Hong Wang and Robert A. Walker, in Proc. of the 17th International Parallel and Distributed Processing Symposium (Workshop in Massively Parallel Processing), abstract on page 267, full text on CDROM, Nice, France, April 2003.

Hong Wang

Teaching Experiences.

Current courses: Operating Systems, Database, Website Design, Client-Side Scripting

Complete list of courses taught before:

Note: * New Course Developed or #Significantly or Completely Redeveloped

CSET 1100 – Introduction to Computer Science#

CSET 1200 - GUI Programming *

CSET 2100 – Small Computer Systems

CSET 2200 – Local Area Network#

EECS 2520 – Discrete Structures#

CSET 3100 – Adv. Website Design#

CSET 3200 – Client Server Computing#

CSET 3250 – Client-Side Scripting#

CSET 3300 – Database Driven Website#

CSET 4100 – Server-Side Scripting#

CSET 4150 – System Administration

CSET 4350 – Operating Systems*

CSET 4850 – Network Security*

EET 4250 (CSET2230) – Computer Architecture *