

# Huihui H. Wang

Khoury College of Computer Sciences  
Northeastern University in Arlington, VA

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## **EDUCATION**

UNIVERSITY OF VIRGINIA USA  
**Ph.D in Electrical and Computer Engineering**

XI'AN JIAOTONG UNIVERSITY China  
**M.S. in Mechanical Engineering**

NORTHWESTERN POLYTECHNICAL UNIVERSITY China  
**B.S. in Environment Engineering**

## **POSITIONS HELD**

**Northeastern University**, Khoury College of Computer Sciences, Arlington, VA  
**Full Teaching Professor** (July 2024 to present)  
**Director of Computing Programs** (July 2024 to present)

**National Science Foundation**  
**Program Director** (August 2021 to June 2024)

**St. Bonaventure University**, Department of Cybersecurity  
**Associate Professor** (January 2021 to June 2024)  
**Director of Cybersecurity Programs** (January to August 2021)

**Jacksonville University**  
Department of Engineering  
**Associate Professor** (May 2019 to December 2020)  
**Founding Chair** (July 2015 to April 2020)  
**Assistant Professor** (July 2015 to May 2019)  
Engineering Dual Degree Program  
**Assistant Professor and Director** (August 2013 to July 2015)

## **ADMINISTRATIVE EXPERIENCE**

**Northeastern University**, Khoury College of Computer Sciences, Arlington, VA (July 2024 to present)

### **Director, Computing Programs (July 2024 to present)**

- Recruit and supervise faculty of three computing MS programs:  
Computer Science, Computer Science Align, Cybersecurity, Cybersecurity Align
- Lead to design/refine curricula of computing programs;
- Manage the budgets such as operating budget;
- Administer course schedules, student evaluations of faculty and annual evaluations of faculty;
- Manage the promotion review;
- Manage grade appeals, student complaints, and faculty concerns;

- Organize Khoury team in Arlington monthly meetings;
- Represent the programs at the college and university level--orientation, open house, admissions events, career expos and outreach activities;

**National Science Foundation**, Alexandria, Virginia, August 2021 – June 2024

**Program Director (on detail)**, Division of Innovation and Technology Ecosystems, Directorate of Technology Innovation Partnerships (TIP), (February 4 to June 2, 2024, 75% working load)

- Working on the Accelerating Research Translation Program;

**Program Director**, Division of Undergraduate Education, Directorate of STEM Education (EDU), (August 2021 to February 3, 2024, 100% working load; February 4, 2024 to June 2, 2024, 25% working load)

- Managing over \$200M award portfolios of NSF programs: Improving Undergraduate STEM Education (IUSE), Scholarships in STEM (S-STEM), Advanced Technological Education (ATE), Accelerating Research Translation (ART), and Major Research Instrumentation (MRI) ;
- Processing and co-funding proposals with CISE/CNS/CUE Program, EDU/HSI program and EDU/DGE/SaTC EDU program;
- Conducting workshops (in person and virtually) to faculty and staff of computing and engineering;
- Participating in broadening participation, diversity, and inclusion efforts within NSF and outside.
- Collaborating with program directors across the division and directorate;
- Serving on the Major Research Instrumentation Program of the Office of Integrative Activities as the EDU representative;
- Served on a permanent engineering program officer search committee, and participated in hiring processes of rotators;
- Served on the Strategic Partnerships Interagency Working Group under the STEM Education Committee of National Science and Technology Council (NSTC);
- Served on the Accelerating Research Translation working group of the Directorate of TIP;
- Served on the interagency working group of Council for Inclusive Innovation (CI<sup>2</sup>).

**St. Bonaventure University**

**Director, Cybersecurity Program (January to August 2021)**

- Recruited and supervised faculty of the Cybersecurity BS and MS Programs;
- Led to prepare for the application for NSA/DHS designated CAE-CDE;
- Led to establish the process for the application for ABET accreditation of the Cybersecurity Program;
- Led to refine curricula of cybersecurity BS and MS programs;
- Led to improve the cybersecurity lab;
- Reconnected with the members of the cybersecurity advisory council;
- Managed the budgets such as operating budget, gift/donation budgets, renovation budgets, department IDC budget, and student chapter budget;
- Administered course schedules, student evaluations of faculty and write annual evaluations of full time faculty and staff;
- Managed the pre-tenure review, tenure and promotion review;
- Managed grade appeals, student complaints, and faculty concerns;
- Organized monthly program meetings, advisory council meetings twice per year, and annual senior design presentations;
- Encouraged faculty development by securing funding, recommending faculty to participate in cybersecurity annual national and regional conferences;

- Developed undergraduate peer mentoring program for freshmen/sophomores by juniors/seniors;
- Represented the program at university wide orientation, open house, admissions events, career expos and outreach activities;
- Coordinated the summer camp, and Computing day for girls only.

## **Jacksonville University**

### **1. Founding Chair, Department of Engineering (July 2015 to April 2020)**

- Recruited and supervised faculty and 1 lab technician;
- Doubled student enrollment in 4 years;
- Led to design and refine curricula of mechanical engineering (ME) and electrical engineering (EE) majors, as well as 5 minors such as general engineering, ME, EE, engineering management, and computer engineering. New initiative focuses on the design-based curricula for both majors, remote teaching and learning, and project-based learning experiences;
- Led to set up the engineering labs, renovated the machine shop and update the equipment and machines;
- Led to establish the process for ABET accreditation—collected data every semester, designed and conducted surveys with the constituents, wrote self-study reports for both ME and EE programs, and worked with 2 consultants (one for each program) to review the self-study reports;
- Wrote and submitted the reports for SACSCOC accreditation on TracDat;
- Wrote the mission statement of the engineering advisory board and recruited 17 board members;
- Managed the budgets such as operating budget, gift/donation budgets, renovation budgets, department IDC budget, and student chapter budget;
- Administered course schedules, student evaluations of faculty and wrote annual evaluations of full time faculty and staff;
- Managed the pre-tenure review, tenure and promotion review;
- Managed grade appeals, student complaints, and faculty concerns;
- Organized monthly department meetings, advisory board meetings twice per year, and annual senior design presentations;
- Encouraged faculty development by securing funding, recommending faculty to attend AAC&U Summer Institutes, and leading a team of faculty and students to participate in ASEE annual national and regional conferences;
- Led interdisciplinary NSF grant applications (NSF S-STEM, IUSE, ADVANCE) to increase student enrollment and diversity, as well as grow undergraduate research excellence;
- Led to recruit students especially women and minorities to NSF Math, Engineering, Physics Scholar (MEPS) program, and conducted undergraduate research with the MEP scholars;
- Developed undergraduate peer mentoring program for freshmen/sophomores by juniors/seniors;
- Promoted study abroad—students have sponsored trips to the United Kingdom, Italy, and Iceland;
- Represented the department at university wide orientation, open house, admissions events, career expos and outreach activities;
- Initiated and implemented annual student field trips to visit the local industry companies;
- Recruited the speakers for the monthly meeting of NSPE/FES JU student chapter;
- Coordinated the summer camp, and engineering day for girls only (every spring).

## **2. Director, Engineering Dual Degree Program (August 2013 to June 2015)**

- Reviewed our curriculum periodically to make sure students can transfer to our affiliated institutions (AIs) smoothly;
- Communicated with the liaisons at AIs periodically;
- Hosted the liaisons' visits to JU;
- Managed the budgets such as operating budget, renovation budget, and student chapter budget;
- Administered course schedules, student evaluations of faculty and student transfer reviews;
- Managed grade appeals, student complaints, and faculty concerns;
- Organized monthly program meetings;
- Led to recruit students especially women and minorities to NSF MEPS program, and conducted undergraduate research with the MEP scholars;
- Represented the department at university wide orientation, open house, admissions events, career expos and outreach activities;
- Initiated and implemented annual student field trips to visit AIs;
- Recruited the speakers for the monthly meeting of NSPE/FES JU student chapter;
- Coordinated the engineering day for girls only (every spring).
- Wrote and submitted the reports for SACSCOC accreditation on TracDat.

## **3. Services on university committees**

- Faculty affairs (Fall 2014–Spring 2016);
- Strategic planning working group on finance and facilities (Fall 2015-summer 2016);
- Task force of Academic Affairs—contributed to design the STEAM institute in a building of 10,000 sq ft (2 floors) to co-house engineering, computing science, fine arts, business, communication, physics and data science (2016 fall to 2019 fall).

## **RESEARCH SUPPORT**

### **External:**

1. “Cybersecurity and Computer Science Lab Upgrades”, **George I. Alden Trust**, \$125,000, July 2022 to June 2023.
2. “Project-based Service Learning and Career-training to Support Graduation and Career Readiness of Engineering and Computing Science Majors”, (former **PI**), **National Science Foundation**, Award Number: 2030727, \$943,266, 12/20-11/25.
3. “Mathematics, Engineering, & Physics Scholars”, (**Co-PI**), **National Science Foundation**, Award Number: 1356544, \$625,673.00, 7/14 -6/20.
4. “A functional interdisciplinary training manikin (FIT-MAN) for healthcare education project”, (**Co-PI**), granted by two private foundations: the St. Vincent/Riverside Hospital Foundation and the Cascone Family Foundation, \$225,000, 2017 Fall to 2020 Spring.
5. “Force Analysis of Soft Contact Lens on Eye Models”, (**PI**), a contract grant by Johnson & Johnson Vision Care Inc., \$15,000, 2019.
6. “Finite Element Models of the Fluid-Solid Interface Between Soft Contact Lenses and Eye Models”, (**PI**), a contract grant by Johnson & Johnson Vision Care Inc., \$8,234, 2020 Summer.

### **Internal:**

7. “Continuation of Study of Plant-based Materials for Sustainable Electronics”, **Huihui Wang, Co-PI**, collaborating with Ramesh Adhikari, and Joseph Cradlebaugh, granted by JU Entrepreneur Policy Innovation and Commerce funding, \$10,535 2018 Summer-2018 Fall.

8. “An exploratory study of the use of plant based materials for sustainable electronics”, **Co-PI** collaborating with Ramesh Adhikari, granted by the Florida State Entrepreneur Policy Innovation and Commerce funding, \$6,000, 2017 Fall-2018 Spring.
9. “A Mobile Water Quality Monitoring System for Aquatic Systems (St. Johns River)”, **PI** collaborating with Quint White, and Ashley Johnson, granted by the Florida State Entrepreneur Policy Innovation and Commerce funding, \$5,000, Fall 2015-Spring 2018.
10. “Establishing a Complete Set of 8 Motion-Analysis Cameras at JU: A Critical Step for Kinesiology, Athletics, and Engineering”, **Co-PI** collaborating with Jeff Wight and Chris Robertson, granted by the Florida State Entrepreneur Policy Innovation and Commerce funding, \$20,000, Fall 2015-Spring 2016.
11. “A fish robot prototype based on ionic polymer metallic composites (IPMC)”, **PI** collaborating with Zhaoyang Huang in Chemistry Department, JU research grant, \$2400, July 2015-June 2016.
12. “A fish robot based on ionic polymer metallic composites”, (**Faculty Mentor**), JU undergraduate research grant, 2014 Spring-2015 Spring.
13. “Shape change based on shape memory alloy for entertainment and education”, (**Faculty Mentor**), JU undergraduate research grant, 2014 Spring-2015 Spring.
14. “Optimization of Fabrication of An Ionic Polymer Metallic Composition”, (**Faculty Mentor**), JU undergraduate research grant, 2015 Spring-2016 Spring.

## **PROFESSIONAL EXPERIENCE**

### **Institute of Electrical and Electronics Engineers (IEEE)**

1. Educational Activities Board, Faculty Resources Committee  
**Chair** (2023)  
**Committee member** (January 2022 to present)
2. Education Society  
**Board of Governors. Member-at-Large** (2024-2026)
3. Jacksonville Section  
**Chair**, Women in Engineering, (2021 January to 2022 July)  
**Vice Chair** (2018 March to 2020 December)

### **American Society of Engineering Education (ASEE)**

Electrical and Computer Engineering Division

**Immediate Past Chair** (2023-2024)

**Chair** (2022-2023)

**Chair-elect** (2021-2022)

**Program Chair** (2020-2021)

**Secretary and Treasurer** (2019-2020)

### **Accreditation Board for Engineering and Technology (ABET)**

1. Engineering Accreditation Commission (EAC)—Computer Engineering.  
**Program Evaluator (PEV)** (June 2023 to present, 5-year term).  
**Program Evaluator Candidate (PEVC)** (February—June, 2023)
2. Computing Accreditation Commission (CAC)--Cybersecurity

**Program Evaluator (PEV)** (June 2023 to present)  
**Program Evaluator Candidate (PEVC)** (January—June, 2023)

**Florida Engineering Society (FES)**

1. Engineering Education Practice Section  
**Treasurer** (2019 May to 2020 December)
2. Northeast Florida Chapter  
**Executive Member of Education Committee** (2013 August to 2020 May)

**PROFESSIONAL DEVELOPMENT**

1. ABET Program Evaluator Training (January to June, 2023)
2. AAC&U Critical Thinking VALUE Rubric Calibration Training (2020 fall)
3. ABET Symposium (self-study report workshop), April 19-21, 2017, Baltimore, MD
4. AAC&U Integrative Learning and the Departments (2016 Summer), Loyola University, Chicago, Illinois
5. ABET Advancement Program Assessment Workshop (2016 Spring), Fort Lauderdale, FL
6. ABET Fundamentals of Program Assessment Workshop (2015 Fall), Dallas, TX
7. AAC&U PKAL STEM Leadership Institute (2015 Summer), Maryland, MD

**PROFESSIONAL AFFILIATIONS**

1. IEEE, senior member since 2017, 2008 – Present
2. Association for Computing Machinery (ACM), member, 2021-present
3. American Society of Mechanical Engineers (ASME), member, 2012-2020
4. ASEE, member, 2013-present

**CONFERENCE ORGANIZING**

1. Co-leading to organize “Workshop: Preparing Competitive NSF Proposals of Engineering and Computing Education”, 2024 ASEE Annual Conference and Exposition, Portland, OR, June 23-26, 2024.
2. Led IEEE Educational Activities Board Faculty Resources Committee to organize “Panel: Faculty Leadership”, 2023 IEEE ASEE Frontiers in Education Conference, College Station, Texas, USA, October 18-21, 2023.
3. Co-led to organize “Workshop: Preparing Competitive NSF Proposals of Engineering and Computing Education”, 2023 IEEE ASEE Frontiers in Education Conference, College Station, Texas, USA, October 18-21, 2023.
4. Co-led to organize “Workshop: Overview of Science, Technology, Engineering, and Math (STEM) Funding Programs at the National Science Foundation and Techniques to Prepare Competitive STEM Research and Education Proposals”, 2023 ASEE Annual Conference and Exposition, Baltimore, MD, June 25-28, 2023.
5. Led IEEE Educational Activities Board Faculty Resources Committee to organize “Panel: Faculty Leadership”, 2023 ASEE Annual Conference and Exposition, Baltimore, MD, June 25-28, 2023.
6. Technical Program Committee Co-Chair, “The Seventh IEEE International Workshop on Security and Privacy for Internet of Things and Cyber-Physical Systems” in conjunction

- with the 39<sup>th</sup> IEEE International Performance Computing and Communications Conference, Austin, TX, November 6-8, 2020 (Virtual).
7. Technical Program Committee Co-Chair, “The Fifth IEEE International Workshop on Security and Privacy for Internet of Things and Cyber-Physical Systems”, Orlando, FL, November 11-12, 2019.
  8. Co-Chair of workshops of “SIMUtools 2019—11<sup>th</sup> European Alliance for Innovation International Conference on Simulation Tools and Techniques”, July 8-10, 2019, Chengdu, People's Republic of China.
  9. Technical Program Committee Co-Chair, “The Fourth IEEE International Workshop on Security and Privacy for Internet of Things and Cyber-Physical Systems” in conjunction with the IEEE 5th World Forum on Internet of Things, Limerick, Ireland, April 15-18, 2019.
  10. Technical Program Committee, Research in Integration STEM Education (RISE) Working Group, the 8th IEEE Integrated STEM Education (ISEC) conference, March 10, Princeton, NJ, 2018.
  11. Technical Program Committee, IEEE/ACM Big Data Analytics for Smart and Connected Health (BigData4Health2017).
  12. Technical Program Committee, Workshop on Cloud Computing Systems, Networks, and Applications, IEEE Global Communications Conference (GC 2016).
  13. Technical Program Committee, IEEE/ACM Big Data Analytics for Smart and Connected Health (BigData4Health2016)
  14. Technical Program Committee, 1<sup>st</sup> Workshop on Security and Privacy for Internet of Things and Cyber-Physical Systems, IEEE International Conference on Communications (ICC 2015).
  15. Technical Program Committee, Workshop on Cloud Computing Systems, Networks, and Applications, IEEE Global Communications Conference (GC 2015).
  16. Technical Program Committee, Workshop - E2IoT, 2015 IEEE Wireless Communications and Networking Conference (WCNC).
  17. Technical Program Committee, 3<sup>rd</sup> Workshop on Internet of Things, IEEE International Conference on Communications in China (ICCC 2015).
  18. Technical Program Committee, Signal Processing for Communications (SPC) track of the 2nd International Conference on Digital Signal Processing (MIC-SigProc 2014).
  19. Technical Program Committee, Network and Information Security (NIS) track of 1st International Conference on Communications and Computer Networks (MIC-Networks 2014).
  20. Technical Program Committee, 2<sup>nd</sup> Workshop on Internet of Things, IEEE International Conference on Communications in China (ICCC 2014).
  21. Technical Program Committee, 1<sup>st</sup> Workshop on Internet of Things, IEEE International Conference on Communications in China (ICCC 2013).
  22. Technical Program Committee, 2nd Workshop on Smart Material Interfaces: “Another Step to a Material Future”, 2013 International Conference on Multimodal Interaction (ICMI 2013), December 13, 2013, Coogee Bay Hotel, Sydney, Australia.

## **REVIEWING**

### **Panels/Fellowships**

1. Panelist, National Science Foundation (NSF--CISE, EHR), 2016, 2018, 2019, 2020, 2021
2. Panelist, National Aeronautics and Space Administration (NASA), 2020

3. Reviewer, NCWIT seed fund, 2020
4. Reviewer, Marie Skłodowska-Curie Fellowship (known as EDGE Fellowship), 2018, 2019

### **Books/Chapters**

1. Book: Artificial Intelligence in Urban Planning and Design, (Elsevier)
2. Book Chapters: Exploring Engineering, Fifth Edition: An Introduction to Engineering and Design, the 5<sup>th</sup> Edition, (Academic Press)
3. Book Chapters: Big Data Analytics in Cyber Physical Systems (Elsevier)
4. Book Chapters: Exploring Engineering, Fourth Edition: An Introduction to Engineering and Design, the 4<sup>th</sup> Edition, (Academic Press)
5. Book: Smart Cities Data Analytics in Cyber-Physical Systems, (Elsevier)

### **Journals/Transactions**

1. IEEE Internet of Things Journal, 2020, 2021
2. IEEE Transactions on Mobile Computing, 2020
3. IEEE Transactions on Industrial Informatics, 2020
4. Interacting with Computers, 2020
5. Journal: Computer Networks, 2017, 2019
6. KSII Transactions on Internet and Information Systems (Associate Editor, 2018 to 2020)
7. International Journal of Geo-Information, 2017, 2019
8. International Journal of Distributed Sensor Networks, 2019
9. IEEE Transactions on Industrial Informatics, 2016, 2018, 2020
10. Future Generation Computer Systems, 2017, 2018
11. IEEE Transactions on Industrial Electronics, 2018
12. Journal of Translational Engineering in Health and Medicine, 2017
13. Journal of Sensor and Actuator Networks, 2017
14. International Journal of Computers and Electrical Engineering, 2016, 2017
15. Sensors, 2015, 2016, 2017
16. IEEE Communications Magazine, 2016
17. IEEE Systems Journal, 2015
18. Security and Communication Networks, 2014, 2015, 2016
19. Process Safety Progress, (Wiley), 2013

### **Conferences**

1. ASEE Annual Conference, 2015, 2018, 2019, 2020, 2021, 2022, 2023
2. Frontiers in Education, 2023
3. IEEE BSN/BHI conference, 2019
4. IEEE 5<sup>th</sup> World Forum on Internet of Things (WF-IoT), 2019
5. IEEE Integrated STEM Education Conference (ISEC), 2018
6. Capstone Design Conference, 2018
7. ASEE SE Conference, 2015, 2018
8. IEEE Haptics Symposium, 2012

### **HONORS AND AWARDS**

1. IEEE R3 Joseph M. Biedenbach Outstanding Engineering Educator Award, 2021
2. Faculty development funds, Jacksonville, University, 2014 Spring-2020 Spring



3. Nominee, Faculty Award for Excellence in University Service, 2015, 2020
4. Three undergraduate research funds, Jacksonville University, 2014 Spring-2016 Spring
5. Nominee, Professor of the Year Award organized by Florida Engineering Society, 2015
6. Nominee, 40 under 40 award organized by Jacksonville Business Journal, 2015, 2021
7. Teaching fellowship, University of Virginia, 2013 Spring

## **PATENT**

1. "METHODS AND DEVICES FOR SELECTIVELY CONTROLLING AND VARYING SURFACE TEXTURE AND/OR FORCE LEVELS ON A MOBILE DEVICE USING HAPTIC FEEDBACK" Inventors: **H. Wang**, R. Ruuspakka, D. Kaleas, R. Tartz, published with the United States Patent Office as U.S. Publication No. US20130241718 A1 on September 19, 2013 and US9208662 on December 8, 2015.
2. "METHODS AND DEVICES FOR SELECTIVELY CONTROLLING AND VARYING SURFACE TEXTURE AND/OR FORCE LEVELS ON A MOBILE DEVICE USING HAPTIC FEEDBACK" Inventors: **H. Wang**, R. Ruuspakka, D. Kaleas, R. Tartz, published with the European Patent Organization Publication No. EP2828726A1 on January 28, 2015.
3. "METHODS AND DEVICES FOR SELECTIVELY CONTROLLING AND VARYING SURFACE TEXTURE AND/OR FORCE LEVELS ON A MOBILE DEVICE USING HAPTIC FEEDBACK" Inventors: **H. Wang**, R. Ruuspakka, D. Kaleas, R. Tartz, published with the World Intellectual Property Organization Publication No. WO2013138769 A1 on September 19, 2013.
4. "METHODS AND DEVICES FOR SELECTIVELY CONTROLLING AND VARYING SURFACE TEXTURE AND/OR FORCE LEVELS ON A MOBILE DEVICE USING HAPTIC FEEDBACK" Inventors: **H. Wang**, R. Ruuspakka, D. Kaleas, R. Tartz, published with the China Patent Office Publication No. CA104169840A on November 26, 2014.
5. "LOUDNESS ASSISTANCE SYSTEM", Inventors: C. Sapienza, **H. Wang**, USPTO file number: US62490048, filed April 26, 2017.

## **PUBLICATIONS**

### **Book Chapters**

1. **H. Wang**, R. Wang and Y. Li, "The Development and Challenge of the Smart Grid in the USA", Blue Book of Internet of Things (IoT), 242-263, Social Sciences Academic Press (SSAP), 2012.
2. X. Fang and **H. Wang**, "MEMS Technology Application in the Internet of Things (IoT)", Blue Book of Internet of Things (IoT), 163-168, Social Sciences Academic Press (SSAP), 2012.
3. **H. Wang** and Y. Li, "The State of the Art and Practice of the Core Technologies of the Internet of Things in the Developed World", Blue Book of Internet of Things (IoT), 222-241, Social Sciences Academic Press (SSAP), 2011.

### **Papers**

#### **Journals**

1. K. Haseeb, A. Rehman, T. Saba, S. Ali Bahaj, **H. Wang**, H. Song, "Efficient and trusted autonomous vehicle routing protocol for 6G networks with computational intelligence", *ISA Transactions*, 2022, ISSN 0019-0578, <https://doi.org/10.1016/j.isatra.2022.09.035>.
2. X. Guo, Z. Ji, Q. Feng, **H. Wang**, Y. Yang and Z. Li, "URS: A Light-Weight Segmentation Model for Train Wheelset Monitoring," in **IEEE Transactions on Intelligent Transportation Systems**, 2022, doi: 10.1109/TITS.2022.3186587.
3. X. Feng, C. Luo, B. Wei, J. Zhang, J. Li, **H. Wang**, W. Xu, M.C. Chan, V.C.M. Leung, "Time-Constrained Ensemble Sensing With Heterogeneous IoT Devices in Intelligent Transportation Systems," in **IEEE Transactions on Intelligent Transportation Systems**, doi: 10.1109/TITS.2022.3170028.
4. L. Yao, X. Xu, M. Bilal and **H. Wang**, "Dynamic Edge Computation Offloading for Internet of Vehicles With Deep Reinforcement Learning," in **IEEE Transactions on Intelligent Transportation Systems**, doi: 10.1109/TITS.2022.3178759.
5. G. Manogaran, B. S. Rawal, H. Song, **H. Wang**, C. Hsu, V. Saravanan, S. N. Kadry, and P. M. Shakeel, "Optimal Energy-Centric Resource Allocation and Offloading Scheme for Green Internet of Things Using Machine Learning," **ACM Trans. Internet Technol.** 22, 2, Article 36 (May 2022), 19 pages. <https://doi.org/10.1145/3431500>.
6. M. Poongodi, M. Hamdi, **H. Wang**, "Image and audio caps: automated captioning of background sounds and images using deep learning", *Multimedia Systems* (2022). <https://doi.org/10.1007/s00530-022-00902-0>.
7. J. Chen, Y. Zhang, J. Li, W. Du, Z. Chen, Z. Liu, **H. Wang**, V. Leung, "Integrated Air-Ground Vehicles for UAV Emergency Landing based on Graph Convolution Network," in **IEEE Internet of Things Journal**, doi: 10.1109/JIOT.2021.3058192.
8. A. Mehmood, **H. Wang**, "Smart Delivery And Retrieval of Swab Collection Kit for COVID-19 test Using Autonomous Unmanned Aerial Vehicle", in *Physical Communication*, Elsevier, 2021.
9. B. Jiang, J. Li, **H. Wang** and H. Song, "Privacy-Preserving Federated Learning for Industrial Edge Computing via Hybrid Differential Privacy and Adaptive Compression," in **IEEE Transactions on Industrial Informatics**, doi: 10.1109/TII.2021.3131175.
10. J. Yang, S. Xiao, A. Li, G. Lan, **H. Wang**, "Detecting fake images by identifying potential texture difference", *Future Generation Computer Systems*, Volume 125, 2021, Pages 127-135, ISSN 0167-739X, <https://doi.org/10.1016/j.future.2021.06.043>.
11. F. Kong, J. Li, B. Jiang, **H. Wang** and H. Song, "Integrated Generative Model for Industrial Anomaly Detection via Bi-directional LSTM and Attention Mechanism," in **IEEE Transactions on Industrial Informatics**, doi: 10.1109/TII.2021.3078192.
12. M. Fang, Y. Chen, R. Xue, **H. Wang**, N. Chakraborty, T. Su Y. Dai, "A hybrid machine learning approach for hypertension risk prediction", *Neural Comput & Applic* (2021). <https://doi.org/10.1007/s00521-021-06060-0>.
13. Y. Jiang, M. Wang, Z. Su, Y. Yang and **H. Wang**, "Formal Design of Multi-Function Vehicle Bus Controller," in **IEEE Transactions on Intelligent Transportation Systems**, vol. 22, no. 6, pp. 3880-3889, June 2021, doi: 10.1109/TITS.2021.3078372.
14. D. Jiang, H. Song, H. Rong, **H. Wang**, "Simulation Tools and Techniques for Communications and Networking", in *Mobile Networks and Application*, vol. 26, 571-574 (2021). <https://doi.org/10.1007/s11036-021-01746-0>.
15. **H. Wang**, M. Xiao, C. Wu, J. Zhang, "Distributed classification for imbalanced big data

- in distributed environments”, *Wireless Networks* (2021). <https://doi.org/10.1007/s11276-021-02552-y>.
16. K. Han, Y. Duan, R. Jin, Z. Ma, **H. Wang**, W. Wu, B. Wang, X. Cai, “Attack Detection Method based on Bayesian Hypothesis Testing Principle in CPS”, *Procedia Computer Science*, Volume 187, 2021, Pages 474-480, ISSN 1877-0509, <https://doi.org/10.1016/j.procs.2021.04.086>.
  17. X. Wang, L. T. Yang, L. Song, **H. Wang**, L. Ren and M. J. Deen, "A Tensor-Based Multiattributes Visual Feature Recognition Method for Industrial Intelligence," in **IEEE Transactions on Industrial Informatics**, vol. 17, no. 3, pp. 2231-2241, March 2021, doi: 10.1109/TII.2020.2999901.
  18. J. Yang, J. Zhang and **H. Wang**, “Urban Traffic Control in Software Defined Internet of Things via a Multi-Agent Deep Reinforcement Learning Approach,” in **IEEE Transactions on Intelligent Transportation Systems**, doi: 10.1109/TITS.2020.3023788.
  19. Yang, J. Wen, B. Jiang and **H. Wang**, “Blockchain-Based Sharing and Tamper-Proof Framework of Big Data Networking,” in **IEEE Network**, vol. 34, no. 4, pp. 62-67, July/August 2020, doi: 10.1109/MNET.011.1900374.
  20. N. Chakraborty, J. Li, S. Mondal, C. Luo, **H. Wang**, M. Alazab, F. Chen, Y. Pan, “On Designing a Lesser Obtrusive Authentication Protocol to Prevent Machine Learning based Threats in Internet of Things”, in **IEEE Internet of Things Journal**, doi: 10.1109/JIOT.2020.3025274.
  21. J. Yang, J. Zhang, C. Ma, **H. Wang**, J. Zhang, G. Zheng, “Deep learning-based edge caching for multi-cluster heterogeneous networks”, *Neural Comput & Applic* 32, 15317–15328 (2020). <https://doi.org/10.1007/s00521-019-04040-z>.
  22. Z. Sun, Z. Lv, **H. Wang**, Z. Li, F. Jia and C. Lai, “Sensing Cloud Computing in Internet of Things: A Novel Data Scheduling Optimization Algorithm,” in *IEEE Access*, vol. 8, pp. 42141-42153, 2020, doi: 10.1109/ACCESS.2020.2977643.
  23. J. Yang, C. Wang, **H. Wang** and Q. Li, "A RGB-D Based Real-Time Multiple Object Detection and Ranging System for Autonomous Driving," in **IEEE Sensors Journal**, vol. 20, no. 20, pp. 11959-11966, 15 Oct.15, 2020, doi: 10.1109/JSEN.2020.2965086.
  24. W. Jing, J. Lin, **H. Wang**, “Building NAS: Automatic designation of efficient neural architectures for building extraction in high-resolution aerial images”, *Image and Vision Computing*, Volume 103, 2020, 104025. <https://doi.org/10.1016/j.imavis.2020.104025>.
  25. C. Liu, J. Gao, Y. Li, **H. Wang**, Z. Chen, “Studying gas exceptions in blockchain-based cloud applications”, *J Cloud Comp* 9, 35 (2020). <https://doi.org/10.1186/s13677-020-00176-9>.
  26. X. Zhao, W. Dou, X. Yin, **H. Wang**, Y. Luo and L. Qi, "Edge Computing-Enabled Deep Learning for Real-time Video Optimization in IIoT," in **IEEE Transactions on Industrial Informatics**, doi: 10.1109/TII.2020.3020386.
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2. R. Restivo, L. Dodson; J Wang, W. Tan; Y. Liu, **H. Wang**, H. Song, “GPS Spoofing on UAV: A Survey”, *IEEE INFOCOM workshops*, New York area, May 17-20, 2023.
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8. **H. Wang**, C. Leong, M. Chalkley, C. Maines, B. Holbrooks, L. Clements, “WIP: Co-curricular and Extra-curricular Experiences of NSF-supported Scholars”, *Proceedings of the 2018 ASEE annual conference*, Salt Lake City, UT, June 24-27, 2018.
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- supported Scholars' Career Readiness", the 2018 ASEE Southeastern Section Conference, Daytona Beach, FL, March 4-6, 2018.
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  11. **H. Wang**, S. Davis, E. Selvi, L. Atkins, "WIP: The Impacts of Project-Based Service Learning on Students' Professional Identities and Career Readiness", Proceedings of the 2017 ASEE annual conference, Columbus, OH, June 25-28, 2017.
  12. L. Clements, **H. Wang**, W. Lane, A. Little, H. Dong, "NSF S-STEM, Mathematics, Engineering, Physics Scholars", Proceedings of the 2017 ASEE annual conference, Columbus, OH, June 25-28, 2017.
  13. T. Hasty, J. Shelly, **H. Wang**, "Sampling Fish: Wirelessly acquiring data from a water body," the 31st Annual National Conference on Undergraduate Research (NCUR), Memphis, Tennessee, April 6-8, 2017.
  14. Z. Sun, L. Li, **H. Wang**, X. Xing, "A Novel Energy Efficient Multi-target Coverage Control Protocol with Event Driven Mechanism of Wireless Sensor Network," International Conference on Identification, Information, and Knowledge in the Internet of Things (IIKI), 2015: 201-205.
  15. D. Pappas, J. Leong, B. Duque, C. Beachler, **H. Wang**, "A fish robot prototype based on ionic polymer metallic composite," the 29<sup>th</sup> Annual National Conference on Undergraduate Research (NCUR), Cheney, Washington, April 16-18, 2015.
  16. J. Maywood, W. Miller, **H. Wang**, "Design, Fabrication and Characterization of A 3D Printed Ukulele," the 29<sup>th</sup> Annual National Conference on Undergraduate Research (NCUR), Cheney, Washington, April 16-18, 2015.
  17. D. Pappas, J. Leong, B. Duque, **H. Wang**, "An Information Indicator Based on Two Way Shape Memory Alloys," the 29<sup>th</sup> National Conference on Undergraduate Research (NCUR), Cheney, Washington, April 16-18, 2015.
  18. **H. Wang**, Stephen Cowan, Williams B. Lane, John Leong, Devin Pappas, "Self tuning parts in an Erhu instrument using shape memory alloys", the International Conference on SPIE Smart Structures and Materials + Nondestructive Evaluation and Health Monitoring (SPIE Smart Structures/NDE 2015), March 8-12, 2015, San Diego, CA.
  19. **H. Wang**, Williams B. Lane, Max Orozco, John Leong, Devin Pappas, "An information indicator based on two-way shape memory alloys (SMAs)", the International Conference on SPIE Smart Structures and Materials + Nondestructive Evaluation and Health Monitoring (SPIE Smart Structures/NDE 2015), March 8-12, 2015, San Diego, CA.
  20. Z. Sun, L. Li, **H. Wang** and X. Xing, "A Novel Energy Efficient Multi-target Coverage Control Protocol with Event Driven Mechanism of Wireless Sensor Network," 2015 International Conference on Identification, Information, and Knowledge in the Internet of Things (IIKI), Beijing, 2015, pp. 201-205. doi: 10.1109/IIKI.2015.50.
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  22. B. Duque, **H. Wang**, "A Flexible and Hands Free Control Support for Mobile Devices based on Shape Memory Alloy", the 28<sup>th</sup> Annual National Conference on Undergraduate Research (NCUR), Kentucky, Lexington, Kentucky, April 3-5, 2014.

23. **H. Wang**, J. T. Gaskin, M. L. Reed, C. R. Knospe, “The Capillary Force Actuator: Design, Fabrication and Characterization”, 2012 IEEE 25th International Conference on Micro Electro Mechanical Systems (MEMS), Paris, 2012, pp. 1185-1188. doi: 10.1109/MEMSYS.2012.6170375.
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## **PRESENTATIONS**

1. J. Ladeji-Osias, **H. Wang**, A. Ilumoka, C. Grant, A. Medina-Borja, S. Acharya, E. Gonzalez, S. Dekhane, M. Verleger, “Workshop: Preparing Competitive NSF Proposals of Engineering and Computing Education”, presented at the 2023 IEEE ASEE Frontiers in Education Conference, College Station, Texas, USA, October 18-21, 2023.
2. R. Restivo, C. Walsh, W. C. Duclos, V. Mali, J. Wang, **H. Wang**, T. Yang, R. Stansbury, H. Song, “NSF REU Site: Swarms of Unmanned Aircraft Systems in the Age of AI/Machine Learning”, presented at the 2023 ASEE Annual Conference and Exposition, Baltimore, MD, June 25-28, 2023.
3. C. Grant, M. Hjalmanson, A. Ilumoka, A. Kennedy, J. Jackman, J. Ladeji-Osias, V. Lohani, J. Nelson, J. Schildbach, E. Sheppard, **H. Wang**, J. Ellis, J. Colom, “Workshop: Overview of Science, Technology, Engineering, and Math (STEM) Funding Programs at the National Science Foundation and Techniques to Prepare Competitive STEM Research and Education Proposals”, presented at the 2023 ASEE Annual Conference and Exposition, Baltimore, MD, June 25-28, 2023.
4. J. Forbes, Li Yang, **H. Wang**, “NSF Merit Review System and Grant Writing”, presented at the 54<sup>th</sup> ACM Technical Symposium on Computer Science Education, Toronto, ON, Canada, March 15-18, 2023.
5. M. Rogers, **H. Wang**, Li Yang, “NSF Merit Review System and Grant Writing”, presented at the 53<sup>rd</sup> ACM Technical Symposium on Computer Science Education, Providence, RI, March 2-5, 2022.
6. M. Rogers, **H. Wang**, Li Yang, “The Future of Computing Education Research in CISE and DUE”, presented at the 53<sup>rd</sup> ACM Technical Symposium on Computer Science Education, Providence, RI, March 2-5, 2022.
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8. N. Carney, K. Coyle, P. Faniyi, H. Huang, **H. Wang**, “Fabrication and Characterization of an Ionic Polymer Metal Composites”, presented at the 2018 ASEE Southeastern Section Conference, Daytona Beach, FL, March 4-6, 2018.
9. A. Floyd, B. Holbrooks, F. Washburn, **H. Wang**, “Design and Development of a Wearable e-Health System, presented at the 2018 ASEE Southeastern Section Conference, Daytona Beach, FL, March 4-6, 2018.



10. L. Clements, **H. Wang**, W. Lane, A. Little, H. Dong, “NSF S-STEM, Mathematics, Engineering, Physics Scholars”, presented at the 124<sup>th</sup> ASEE annual conference, Columbus, OH, June 25-28, 2017.
11. **H. Wang**, S. Davis, E. Selvi, L. Atkins, “WIP: The Impacts of Project-Based Service Learning on Students’ Professional Identities and Career Readiness”, presented at the 124<sup>th</sup> ASEE annual conference, Columbus, OH, June 25-28, 2017.
12. **H. Wang**, Stephen Cowan, Williams B. Lane, John Leong, Devin Pappas, “Self tuning parts in an Erhu instrument using shape memory alloys”, presented at the International Conference on SPIE Smart Structures and Materials + Nondestructive Evaluation and Health Monitoring (SPIE Smart Structures/NDE 2015), March 8-12, 2015, San Diego, CA.
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14. **H. Wang**, “Design, Microfabrication and Characterization of Capillary Force Actuators”, January 23<sup>rd</sup>, 2014, Science and Engineering Lecture Series, Jacksonville University, Jacksonville, FL.
15. **H. Wang**, “Design, Microfabrication and Characterization of Capillary Force Actuators”, September, 2013, National Society of Professional Engineering, Jacksonville University, Jacksonville, FL.
16. **H. Wang**, “Design, Microfabrication and Characterization of Capillary Force Actuators”, May 15<sup>th</sup>, 2013, Bowling Green State University, Bowling Green, OH
17. **H. Wang**, “Design, Microfabrication and Characterization of Capillary Force Actuators”, March 8<sup>th</sup>, 2013, Midwestern State University, Wichita Fall, TX
18. **H. Wang**, “Design, Microfabrication and Characterization of Capillary Force Actuators”, February 13<sup>th</sup>, 2013, Qualcomm Inc (Pixtronix Office), Andover, MA.
19. **H. Wang**, J. T. Gaskin, M. L. Reed, C. R. Knospe, “The Capillary Force Actuator: Design, Fabrication and Characterization”, presented at the 25th International Conference on Micro Electro Mechanical Systems (IEEE MEMS 2012), January 29-February 2, 2012, Paris, France.
20. **H. Wang**, R. Ruuspakka, D. Kales, R. Tartz, “Haptics using a smart material for eyes free interaction in mobile devices”, presented at the International Conference on SPIE Smart Structures and Materials + Nondestructive Evaluation and Health Monitoring (SPIE Smart Structures/NDE 2012), March 11-15, 2012, San Diego, CA.
21. **H. Wang**, M. L. Reed, H. Haj-Hariri, C. R. Knospe, “Microfabrication and Characterization of Capillary Force Actuator Prototypes, the 7th Annual University of Virginia Engineering Research Symposium (UVERS 2011), Apr 1st, 2011. (Honorable Mention Award)
22. **H. Wang**, M. L. Reed, H. Haj-Hariri, C. R. Knospe, “Microfabrication and haracterization of Capillary Force Actuator Prototypes”, 2011 Nanostar Spring Symposium at the University of Virginia.
23. **H. Wang**, L. Pagliari, R. Babij, M. L. Reed, H. Haj-Hariri, C. R. Knospe, “Dynamics of Capillary Force Actuators”, 2010 NSF ECCS Grantees' Conference, November 30-December 3, 2010, Honolulu, Hawaii, USA.

24. C. R. Knospe, M. L. Reed, H. Haj-Hariri, A. Nezamoddini, **H. Wang**, L. Pagliari, R. Babij, “Capillary Force Actuation”, Workshop on Dynamics and Control of Micro and Nanoscale Systems, IBM Research, December 10-11, 2009, Zurich, Switzerland.

## **SCHOLARS/STUDENTS SUPERVISED**

### **Visiting Scholar**

X. Cai, (AY 2018-2019), Assistant Professor, Yunan Agricultural University, China.

### **Senior Design**

1. Frederik Washburn, (B.S. 2018), B.S. Thesis: “An Exploratory Study of Data Mining and Machine Learning Algorithms”.
2. Aaron Floyd (B.S. 2018 Spring, unfinished), B.S. Thesis: “Design and Develop of Networks for An e-Health System”.
3. Nicolas Hopkins (B.S. 2017 Spring), B.S. Thesis: “A Loudness Assistant Device for Parkinson’s Disease Patients”.
4. Tom Roe (B.S. 2017 Spring), B.S. Thesis: “A Loudness Assistant Device for Parkinson’s Disease Patients”.
5. Trenton Hasty (B.S. 2017 Spring), B.S. Thesis: “An Autonomous System to Monitor Water Quality in St. Johns River”.
6. John Shelly, (B.S. 2017 Spring), B.S. Thesis: “An Autonomous System to Monitor Water Quality in St. Johns River”.
7. Bailey Holbrooks, (B.S. 2017 Fall), B.S. Thesis: “An Autonomous System to Monitor Water Quality in St. Johns River”.
8. Chris Beachler (B.S. 2016 Spring), B.S. Thesis: “An Autonomous Mobile System to Monitor the Dissolved Oxygen of Water in St. Johns River”.
9. Steven Cowan (B.S. 2014 Spring), B.S. Thesis: “Self-Tuning Erhu Instrument Design based on Shape Memory Alloy”.

### **Undergraduate Research**

1. Ryan Restivo (2021 fall to 2023 Spring), Project “An Exploratory Study of UAV Cybersecurity Platform”.
2. Harry Romesburg III (2021 spring), Project “The Cybersecurity of Internet of Things”.
3. Krysten Mitchell (2019 fall—2020 spring), Project “Force Analysis of Soft Contact Lens on Eye Models”.
4. Michael Smith (2019 fall—2020 spring), Project “Force Analysis of Soft Contact Lens on Eye Models”.
5. Walter Merz (2019), Project “An Autonomous System to Monitor Water Quality in St. Johns River”.
6. Festus Ogabaisi (2018 summer—2020 spring), Project “Force Analysis of Soft Contact Lens on Eye Models”.
7. Martins Slaboh (2018 summer—2020 spring), Project “Force Analysis of Soft Contact Lens on Eye Models”.
8. Johnny Villegas (2018 summer-2019 spring), Project “An Autonomous System to Monitor Water Quality in St. Johns River”.

9. Kenneth Huffman (2017 fall to 2018 summer), Project “An exploratory study of the use of plant-based materials for sustainable electronics”.
10. Precious Faniyi (2017 fall to 2018 spring), “A functional interdisciplinary training manikin (FIT-MAN) for healthcare education project”.
11. Aaron Floyd (2017 Spring), Project “An App for an e-Health System”.
12. Nicolas Juarez (2017 Spring), Project “An App for an e-Health System”.
13. Sergio Aponte (2016 Spring until now), Project “3D Modeling and Printing of Prototypes of an e-Health system”.
14. Yanni Cacho (2016 Spring to 2017 Spring), Project-based Service Learning 1 “An Artificial Walking System for a Disable Duck”; Project-based Service Learning 2 “A Handle Part Design and Development of A Food Barrel Based on 3D Printing Technology”.
15. Nolan Carney (2015 Summer to 2016 Summer), “Optimization of Fabrication of an Ionic Polymer Metal Composite”.
16. Adam Hurdis (2016 Spring), “Characterization of an Ionic Polymer Metal Composite”.
17. Ian Vargas (2016 Spring), “Optimization of Fabrication of an Ionic Polymer Metal Composite”.
18. Kyla Siemens (2016 Spring), “Optimization of Fabrication of an Ionic Polymer Metal Composite”.
19. Kevin Coyle (2016 Summer), “Characterization of an Ionic Polymer Metal Composite”.
20. Travis Pulliam (2016 Spring), Project “Optimization of 3D printing process”.
21. John Maywood (2014 Spring until 2016 Spring), Project “Optimization of 3D printing process”.
22. Weston Miller (2014 Fall to 2016 Spring), “Optimization of 3D printing process”.
23. Devin Pappas (2014 Spring to 2015 Spring), Project 1 “A fish robot based on ionic polymer metallic composites”; Project 2 “Shape change based on shape memory alloy for entertainment and education”.
24. John Leong (2014 Spring to 2015 Spring) Project 1 “A fish robot based on ionic polymer metallic composites”; Project 2 “Shape change based on shape memory alloy for entertainment and education”.
25. Chris Fuller (2014 Spring), Project “Optimization of 3D printing”.
26. Antonella Landaeta Gutierrez (2014 Spring), Project “Optimization of 3D printing”.
27. Chris Beachler (2013 Fall to 2015 Summer), Project “Optimization of 3D printing”.
28. Max Orozco (2014 Spring), Project “An information Indicator based on Shape Memory Alloy”.
29. Bryam Duque (2013 Fall to 2015 Spring), Project 1 “A fish robot based on ionic polymer metallic composites”; Project 2 “Shape change based on shape memory alloy for entertainment and education”.

### **High School Summer Research Program**

F. Childs (two weeks in 2021 summer), a sophomore at Hinsdale High school, Hinsdale, NY.

### **References**

1. Dr. J. Kemi Ladeji-Osias (my mentor at AAC&U STEM leadership institute, my collaborator on the NSF proposals)

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2. Dr. Wenying Xu (my former Provost at JU)  
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