

# HA M. DO

ha.do@okstate.edu   ◇   <https://hmdo.github.io/>

## PROFILE

---

- Extensive research experience in mobile robotics, social robots, robot audition, human-robot interaction, smart homes, applied artificial intelligence, and machine learning.
- Hands-on experience in robotics hardware design, software development, implementation, prototyping, and human subject testing.
- Strong programming background: proficient in Python, C++, Matlab, Java, object-oriented analysis, design, programming, and testing.
- Extensive experience with ROS, OpenCV, Keras, Tensorflow, Hark, and NLTK.
- Passionate in solving problems, developing robotics and smart home applications for home health care, and working in challenging projects.

## EDUCATION

---

- |           |   |
|-----------|---|
| Dec. 2018 | <b>Ph.D. in Electrical Engineering</b> , Oklahoma State University, USA<br>Thesis: <i>Robot-assisted elderly care in smart homes</i>              |
| May 2015  | <b>M.Sc in Electrical Engineering</b> , Oklahoma State University, USA<br>Thesis: <i>Developing a home service robot platform for smart homes</i> |
| May 1999  | <b>B.S. in Electronics and Telecommunications</b><br>Hanoi University of Science and Technology (HUST), Vietnam                                   |

## RESEARCH INTERESTS

---

My primary research interests are in robotics and machine learning, focusing on mobile robots, auditory perception, computer vision, spoken language understanding, human-robot interaction, applied artificial intelligence and machine learning. My current research addresses problems in social robots and smart homes for home health care.

## PROFESSIONAL APPOINTMENTS

---

### Colorado State University-Pueblo, USA

Jun. 2019–present    *Postdoctoral Researcher/Professor of the Practice in Engineering*  
Communities to Build Active STEM Engagement, Department of Engineering.

### Oklahoma State University, USA

Jan. 2019–May 2019    *Postdoctoral Fellow*, Lab for Advanced Sensing, Computation and Control (ASCC Lab), School of Electrical and Computer Engineering.

2013–2018                *Graduate Research Associate*, ASCC Lab.

2017–2018                *Graduate Research Associate*, Human Development and Family Science Lab.

2011–2013                *Graduate Research Assistant*, ASCC Lab.

### Posts and Telecommunications Institute of Technology (PTIT), Vietnam

1999–2011            *Faculty member*, Department of Electronics Engineering

### VIJATECH Co., Ltd., Hanoi, Vietnam

2004–2007            *Technical consultant*, Electronic technology transferring projects  
*Instructor*, Courses: VHDL, Verilog, and CPLD/FPGA Design

## RESEARCH EXPERIENCE

---

### Colorado State University-Pueblo

2019–present *Postdoctoral Researcher*, Communities to Build Active STEM Engagement,  
CBASE Grant 5322022

### Oklahoma State University

- 2019–present *Research Consultant*, FW-HTF-P: Robotic Health Assistants: A New Human-Machine Partnership in Home Healthcare, NSF Grant EHR/DUE/1928711  
RI: Small: Enabling Sound-based Human Activity Monitoring for Home Service Robots, NSF Grant CISE/IIS/1928711
- 2014–2018 *Graduate Research Associate*, NRI: Considerate Co-robot Intelligence through Ubiquitous Human State Awareness, NSF Grant CISE/IIS 1427345
- Clinical screening interview using a social robot for geriatric care
  - Socio-emotional maintenance in aging with robotic technology (SMART)
  - Social robots for elderly care
  - Robot-integrated Smart homes for elderly care
  - Auditory learning for home service robots
- 2012–2013 *Graduate Research Assistant*, SHB: Type I (EXP): Context-aware Ubiquitous Human Health Monitoring, NSF Grant CISE/IIS 1231671
- A framework for human-robot collaboration in a Mobile Visual Sensor Network
  - An open platform telepresence robot with natural human interface

### Posts and Telecommunications Institute of Technology (PTIT), Vietnam

- 2009–2010 *Co-PI*, Design and Implementation of Embedded Systems for Information Processing Research project No.01/MN/2009/RD/DT, funded by PTIT
- 2007–2008 *Senior Personnel*, Design and Implementation of a portable cable test instrument Research project No.05/TD/2007/RD/DT, funded by PTIT
- 2005–2006 *PI*, Design and Implementation of CPLD/FPGA development Boards Research project No.04/HV/2005/RD/DT, funded by PTIT
- 2004–2005 *PI*, Design and Implementation of development Boards for 8051 MCUs Research project No.04/HV/2004/RD/DT, funded by PTIT
- 2002–2003 *PI*, Design and Implementation of Electronics the Circuit Experiment Boards driven by Computers. Research project No.32/2002/HV/P/DT, funded by PTIT
- 2000–2002 *Senior Personnel*, Design and Implementation of the Internet Based Testing Software for Distance Training Centers of VNPT (Vietnam Posts and Telecommunications Group) Research project No.222/2000/TCT/AP/DT/83, funded by VNPT

## PUBLICATIONS

---

### Books/Chapters

- [B4] **Ha M. Do**, “Chapter 2-Programmable Logic Device, Chapter 3-Fundamental of VHDL, Chapter 4-VHDL-based Logic Design Methodologies, Chapter 5-Case studies in Design of FPGA-based Digital System with VHDL,” Digital Logic Design, Textbook, Posts and Telecommunications Institute of Technology (PTIT), Nov. 2010 (in Vietnamese).
- [B3] **Ha M. Do**, “Chapter 8-Programmable Logic Devices, Chapter 9-Methodologies of Digital System Design with VHDL,” Digital Electronics, Vietnam Posts and Telematics Publishing House, Mar. 2009 (in Vietnamese).
- [B2] **Ha M. Do**, Ha T.T. Tran, and Linh T.T. Tran, “Semiconductor Devices,” Textbook, Posts and Telecommunications Institute of Technology (PTIT), 2007 (in Vietnamese).
- [B1] **Ha M. Do**, “Fundamental of Electronic Measurement and Instrument,” Textbook, Posts and Telecommunications Institute of Technology (PTIT), 2005 (in Vietnamese).

## Journals

- [J6] **Ha M. Do** and Weihua Sheng, “SoHAM: A sound-based human activity monitoring framework for home service robots,” *IEEE Transactions on Automation Science and Engineering*, 2020 (*Under Review*).
- [J5] **Ha M. Do**, Weihua Sheng, Erin Harrington, and Alex Bishop, “Clinical screening interview using a social robot for geriatric care,” *IEEE Transactions on Automation Science and Engineering*, 2020 [\[link\]](#).
- [J4] Duy Tran, **Ha M. Do**, Weihua Sheng, He Bai, and Girish Chowdhary, “Real-time Detection of Distracted Driving based on Deep Learning,” *IET Intelligent Transport Systems* (2018). [\[link\]](#)
- [J3] **Ha M. Do**, Minh Pham, Weihua Sheng, Dan Yang, and Meiqin Liu, “RiSH: A robot-integrated smart home for elderly care,” *Robotics and Autonomous Systems* 101 (2018). [\[link\]](#)
- [J2] Minh Pham, Yehenew Mengistu, **Ha M. Do**, and Weihua Sheng, “Delivering home health-care through a Cloud-based Smart Home Environment (CoSHE),” *Future Generation Computer Systems*, 81 (2018). [\[link\]](#)
- [J1] **Ha M. Do**, Weihua Sheng, and Meiqin Liu. “Human-assisted sound event recognition for home service robots,” *Robotics and Biomimetics*, 3.1 (2016). [\[link\]](#)

## Conferences

- [C15] Erin Harrington, **Ha M. Do**, G. McCall, Alex J. Bishop, Celinda Reese-Melancon, Weihua Sheng, “Examining discrepancies in social robot versus human assessments of geriatric well-being,” *Innovation in Aging*, Volume 3, Issue Supplement\_1, 2019. [\[link\]](#)
- [C14] Erin Harrington, **Ha M. Do**, G. McCall, E. Boevers, Alex J. Bishop, Weihua Sheng, “Older adult interaction with social robots: Implications for socio-emotional well-being,” *11th World Conference of Gerontechnology*, May, 2018. [\[link\]](#)
- [C13] E. Boevers, G. McCall, Erin Harrington, **Ha M. Do**, Alex J. Bishop, Weihua Sheng, “Exploring older adult concerns regarding acceptance and use of social companion robots,” *11th World Conference of Gerontechnology*, May, 2018. [\[link\]](#)
- [C12] G. McCall, E. Boevers, Erin Harrington, Alex J. Bishop, **Ha M. Do**, Weihua Sheng, “Emergent themes in the likes and dislikes of social robots expressed by older adults,” *11th World Conference of Gerontechnology*, May, 2018. [\[link\]](#)
- [C11] Francisco E. Fernandes, **Ha M. Do**, Kiran Muniraju, Weihua Sheng, Alex J. Bishop, “Cognitive orientation assessment for older adults using social robots,” *Robotics and Biomimetics (ROBIO)*, *2017 IEEE International Conference on*, 2017. [\[link\]](#)
- [C10] Yehenew Mengistu, Minh Pham, **Ha M. Do**, Weihua Sheng, “AutoHydrate: A wearable hydration monitoring system.” *Intelligent Robots and Systems (IROS)*, *2016 IEEE/RSJ International Conference on*. 2016. [\[link\]](#)
- [C9] **Ha M. Do**, Weihua Sheng, Meiqin Liu and Senlin Zhang, “Context-aware sound event recognition for home service robots,” *Automation Science and Engineering (CASE)*, *2016 IEEE International Conference on*. 2016. [\[link\]](#)
- [C8] Minh Pham, Yehenew Mengistu, **Ha M. Do**, Weihua Sheng, “Cloud-Based Smart Home Environment (CoSHE) for home healthcare.” *Automation Science and Engineering (CASE)*, *2016 IEEE International Conference on*. 2016. [\[link\]](#)
- [C7] Francisco E. Fernandes, Guanci Yang, **Ha M. Do**, Weihua Sheng, “Detection of privacy-sensitive situations for social robots in smart homes,” *Automation Science and Engineering (CASE)*, *2016 IEEE International Conference on*. 2016. [\[link\]](#)
- [C6] **Ha M. Do**, Weihua Sheng and Meiqin Liu, “An open platform of auditory perception for home service robots,” *Intelligent Robots and Systems (IROS)*, *2015 IEEE/RSJ International Conference on*, pp. 6161-6166. 2015. [\[link\]](#)
- [C5] **Ha M. Do**, Craig J. Mouser, Meiqin Liu, Weihua Sheng, “Human-robot collaboration in a Mobile Visual Sensor Network,” *Robotics and Automation (ICRA)*, *2014 IEEE International Conference on*, pp.2203,2208, Jun. 2014. [\[link\]](#)

- [C4] **Ha M. Do**, Craig J. Mouser, Ye Gu, Sam Honarvar, Tingting Chen, and Weihua Sheng, “An Open Platform Telepresence Robot with Natural Human Interface,” *Cyber Technology in Automation, Control and Intelligent Systems (CYBER)*, 2013 IEEE 3rd Annual International Conference on, pp.81,86, May 2013. [\[link\]](#)
- [C3] Ye Gu, **Ha M. Do**, Yongsheng Ou, Weihua Sheng, “Human gesture recognition through a Kinect sensor,” *Robotics and Biomimetics (ROBIO)*, 2012 IEEE International Conference on, pp.1379,1384, Dec. 2012. [\[link\]](#)
- [C2] **Ha M. Do**, Craig J. Mouser, Weihua Sheng, “Building a Telepresence Robot Based on an open-source Robot Operating System and Android,” *Third Conference on Theoretical and Applied Computer Science (TACS 2012)*, Oklahoma State University, Oklahoma, Feb. 2012. [\[link\]](#)
- [C1] Hieu T. Nguyen, **Ha M. Do**, Bac H. Dang, Quang S. Dinh, and Minh. N. Nguyen, “A Development of the Digital Cable Faulty Detection and Measurement System”, in *36th AIC*, Manila, Philippines, 2007.

## Posters and Presentations

- [P2] **Ha M. Do**, “Sound-based human activity monitoring for home service robots”, *NSF Doctoral Consortium meeting*, Automation Science and Engineering (CASE), 2016 IEEE International Conference on. 2016.
- [P1] **Ha M. Do** and Bac H. Dang, “Educating, training, and building human resources for electronics design in Vietnam”, *the Conference on Convergence of Digital Technology: IT, Telecommunication and Electronics*, Vietnam Consumer Electronics Expo, Hanoi, Vietnam, Apr. 2008.

## TEACHING EXPERIENCE

---

### Courses Taught

Colorado State University-Pueblo, USA

EN513 Artificial Intelligence (Graduate Course)	Spring 20
EN101 Introduction to Engineering	Fall 19

Posts and Telecommunications Institute of Technology (PTIT), Vietnam

413TKL340 Digital Logic Design	Spring 11, 10, 09, 08, 07
423DAT420 Digital System Design Projects	Summer 11, 10, 09
413CKD240 Semiconductor Devices	Fall 10, 09, 08, 07, 06
413DLD240 Electronic Measurements and Instruments	Fall 09, 08, 07, 05, 04, 03

## HONORS AND AWARDS

---

- Graduate student award, *Research Video Competition*, My Research at OSU Rocks: Companion robots for elderly care, Oklahoma State University, 2018 [\[video link\]](#).
- Travel award, *NSF Doctoral Consortium*, the IEEE 12th Conference on Automation Science and Engineering (CASE 2016), the National Science Foundation Grant IIS 1645670, 2016.
- Aug. 2011–Jul. 2013, *VIET fellowship*, a special program of the Vietnam Government to train the best Vietnamese young lecturers overseas.

## PROFESSIONAL SERVICE

---

### Journal Reviewing

- IEEE Transactions on Automation Science and Engineering: 2019, 2018, 2017, 2016, 2015
- IEEE Robotics and Automation Letters: 2018

### Conference Reviewing

- IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS): 2019, 2018, 2017, 2016
- IEEE International Conference on Robotics and Automation (ICRA): 2019, 2018, 2017, 2016, 2015

- IEEE International Conference on CYBER Technology in Automation, Control, and Intelligent Systems (CYBER): 2017, 2016, 2015
- IEEE International Conference on Automation Science and Engineering (CASE): 2018, 2016
- IEEE International Conference on Robotics and Biomimetics (ROBIO): 2018, 2017, 2016, 2015

## REFERENCES

---

1. **Dr. Weihua Sheng** (Advisor)  
Associate Professor, School of Electrical and Computer Engineering, Oklahoma State University
2. **Dr. Alex Bishop** (Supervisor)  
Associate Professor, Human Development and Family Science Dep., Oklahoma State University
3. **Dr. Jianhao Du** (Former ASCC Lab Manager)  
Senior Software Engineer, Mathworks