

# Jong-Hoon Kim

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- CONTACT INFORMATION Assistant Professor  
Department of Computer Science, Kent State University  
208 Mathematics and Computer Science Building  
Kent, Ohio, 44242-0001, U.S.A. *E-mail: jkim@cs.kent.edu*  
*Office: +1-330-672-9060*
- HIGHLIGHTS
- ★ Ph.D in Computer Science, Louisiana State University, December 2011
  - ★ 20 refereed publications and 5 non-refereed publications
  - ★ About \$12M successful grants that I was involved as a PI, Co-PI, or SI.
  - ★ About 3 years academic and 4 years industrial professional experience
  - ★ Over 400 world wide media coverage on TeleBot Research  
(*Selected Media Coverage: National Fox News - <http://www.youtube.com/watch?v=YYKDXxi2l6I>*)
- RESEARCH INTERESTS Robotics, Telerobotics, Embedded Systems, Human-Robot Interaction, Wearable Computing, Human-Computer Interaction, System Security, Sensor Networks, Smart Home, Autonomous Systems and Vehicle, and Coding Education for Children.
- EDUCATION
- Louisiana State University**, Baton Rouge, Louisiana USA
- Ph.D., Computer Science, December 2011
    - Dissertation Topic: *Sensor-based Autonomous Pipeline Monitoring Robotic System*
    - Adviser: Professor S. S. Iyengar
    - Area of Study: Robotics and Sensor Networks
  - M.S., Computer Science, December 2008
    - Thesis Topic: *Design of a Fully Autonomous Mobile Pipeline Exploration Robot*
    - Adviser: Professor S. S. Iyengar
    - Area of Study: Robotics
- Seoul National University of Science and Technology**, Seoul, South Korea
- B.E., Computer Science and Engineering, January 2005
    - Adviser: Professor Jung-Mo Yoon
- TaeBaek Computer Academy**, Seoul, South Korea
- Diploma in Client-Server Technology, December, 1999
- KyungBuk College**, KyoungBuk, South Korea
- Diploma in Legal Studies, January 1996
- PUBLICATIONS **Refereed Publication** (\*Corresponding Author)
- \*Sevugarajan Sundarapandian, **Jong-Hoon Kim**, Shadeh Ferris-Francis, Jerry Miller, Nagarajan Prabakar, Christopher Charters, Hunter Michko, “A Novel Communication Architecture and Control System for TeleBot: A Multi-Modal Telepresence Robot for Disabled Officers”, *International Journal of Next-Generation Computing (IJNGC)*, ISSN: 0976-5034, VOL. 7, NO. 3, November 28, 2016
- Sarra Berrahal, **Jong-Hoon Kim**, Slim Rekhis, \*Noureddine Boudriga, Deon Wilkinsu, and Jaime Acevedou, “Border surveillance monitoring using Quadcopter UAV-Aided Wireless Sensor Networks”, *Journal of Communications Software and Systems (JCOMSS)*, ISSN: 1845-6421, VOL. 12, NO. 1 (p67 - p82), March 29, 2016

- Jong-Hoon Kim**, \*Gokarna Sharma, Nouredine Boudriga, S.S. Iyengar and Nagarajan Prabakar, “Autonomous Pipeline Monitoring and Maintenance System: An RFID-based Approach”, *EURASIP Journal on Wireless Communications and Networking*, December 21, 2015, IF : 0.72, doi:10.1186/s13638-015-0495-y
- Lohit Penubaku, **Jong-Hoon Kim**, \*Sitharama Iyengar and Shilpa Kadbur, “Access Control System which uses human behavioral profiling for authentication”, *The Second International Symposium on Signal Processing and Intelligent Recognition Systems (SIRS'15)*, Technopark, Trivandrum, India, December 16 - 19, 2015
- Sarra Berrahal, **Jong-Hoon Kim**, Slim Rekhis, \*Nouredine Boudriga, Deon Wilkinsu, and Jaime Acevedou, “Unmanned Aircraft Vehicle Assisted WSN-based Border Surveillance”, *Proceedings of The 23rd International Conference on Software, Telecommunications and Computer Networks (IEEE SoftCOM 2015)*, Bol (Island of Brac), Croatia, September 16 - 18, 2015
- Harold Martin, Jaime Donaw, Robert Kelly, YoungJin Jung, \***Jong-Hoon Kim**, “A Novel Approach of Prosthetic Arm Control using Computer Vision, Biosignals, and Motion Capture”, *Proceedings of IEEE Symposium Series on Computational Intelligence (IEEE-SSCI 2014)*, Orlando, Florida, U.S.A., December 9-12, 2014
- Jong-Hoon Kim**, \*Nagarajan Prabakar, and Cynthia Tope, “Efficient Concurrent Operations of Telepresence Avatars”, *Proceedings of The 44th International Symposium on Robotics*, Seoul, Korea, October 24-26, 2013
- Michael Waddell, Joel Villasuso, Daniela ChavezGuevara, and \***Jong-Hoon Kim**, “Standardized Linearization and Vectorization Algorithm for Arm Motion Control of A Humanoid Telepresence Robot”, *Proceedings of The 44th International Symposium on Robotics*, Seoul, Korea, October 24-26, 2013
- Mangai Prabakar, and \***Jong-Hoon Kim**, “TeleBot: Design Concept of Telepresence Robot for Law Enforcement”, *Proceedings of the 2013 World Congress on Advances in Nano, Biomechanics, Robotics, and Energy Research (ANBRE13)*, Seoul, Korea, pp. 34-42, August 25-28, 2013
- \*Nagarajan Prabakar, C. Tope, and **Jong-Hoon Kim**, “A Smart Multi Telepresence Robot Management System”, *Proceedings of the 2013 World Congress on Advances in Nano, Biomechanics, Robotics, and Energy Research (ANBRE13)*, Seoul, Korea, pp. 43-51, August 25-28, 2013
- Francisco Peleato, Mangai Prabakar, and \***Jong-Hoon Kim**, “Smart Global Positioning System for Autonomous Delivery Robots in Hospitals”, *Proceedings of the 29th Southern Biomedical Engineering Conference (SBEC)*, Miami, FL, May 2013
- Daniela ChavezGuevara, Giuseppe Vietri, Mangai Prabakar, and \***Jong-Hoon Kim**, “Robotic Exoskeleton System Controlled by Kinect and Haptic Sensors for Physical Therapy”, *Proceedings of the 29th Southern Biomedical Engineering Conference (SBEC)*, FL, Miami, May 2013
- Irvin S. Cardenas and \***Jong-Hoon Kim**, “Advanced Technique for Tele-operated Surgery Using an Intelligent Head-mount Display System”, *Proceedings of the 29th Southern Biomedical Engineering Conference (SBEC)*, Miami, FL, May 2013
- Mangai Prabakar, Alejandro Diaz, Daniela Chavez Guevara, and \***Jong-Hoon Kim**, “A Study of Telerobotic Surgery and Telementoring in Space Missions”, *Proceedings of the 29th Southern Biomedical Engineering Conference (SBEC)*, Miami, FL, May 2013
- Uwe J. Cerron, \*Nagarajan Prabakar, and **Jong-Hoon Kim**, “A Framework For Affordable Telemedicine Service”, *Proceedings of the 29th Southern Biomedical Engineering Conference (SBEC)*, Miami, FL, May 2013
- \*Nagarajan Prabakar, **Jong-Hoon Kim**, U. Cerron, and S.S. Iyengar. “Sensor Network Based Parking Management System”, *The ISCA 4th International Conference on Sensor Networks and Applications (SNA)*, New Orleans, LA, November 2012

- Jong-Hoon Kim**, Gokarna Sharma, and \*S. Sitharama Iyengar. “Design Concept and Motion Planning of a Single-Moduled Autonomous Pipeline Exploration Robot”, *The 37th Annual Conference of the IEEE Industrial Electronics Society(IEEE- IECON 2010)*, Phoenix, AZ, November 7-10, 2010
- Jong-Hoon Kim**, Gokarna Sharma, and \*S. Sitharama Iyengar. “FAMPER: A Fully Autonomous Mobile Robot for Pipeline Exploration”, *International Conference on Industrial Technology (IEEE- ICIT 2010)*, Vina del Mar - Valparaiso, Chile, March 14-17, 2010.
- Jong-Hoon Kim**, Gokarna Sharma, Nouredine Boudriga, and \*S. Sitharama Iyengar. “RAMP System for Proactive Pipeline Monitoring”, *The Third International Conference on Communication Systems and Networks(IEEE- COMSNETS 2010)*, Bangalore, India, January 5-9, 2010.
- Jong-Hoon Kim**, Gokarna Sharma, Nouredine Boudriga, and \*S. Sitharama Iyengar., “SPAMMS: A Sensor-based Pipeline Autonomous Monitoring and Maintenance System”, *The Third International Conference on Communication Systems and Networks(IEEE- COMSNETS 2010)*, Bangalore, India, January 5-9, 2010.

### Non-Refereed Publication

- Shiny Pearl Kona, Nathaniel Butler, Rajesh Vijayasekar, Worlanyo Adzimah, and \***Jong-Hoon Kim**, “Design of an Intelligent Robotic Audio System for Smart Home Environment”, *Florida Conference on Recent Advances in Robotics, Miami, Florida, May 2014*
- Justin Rodriguez, Hunter Michko, Anthony Aguilar, and \***Jong-Hoon Kim**, “Design of a Low Cost Emergency Response Bot”, *Florida Conference on Recent Advances in Robotics, Miami, Florida, May 2014*
- Lazaro Herrera, Francisco Peleato, and \***Jong-Hoon Kim**, “Viability of Indoor Robotic Air Aquariums”, *Florida Conference on Recent Advances in Robotics, Boca Raton, Florida, May 2012*
- Cardenas Irvin, Shao Leo, and \***Jong-Hoon Kim**, “GunBot: Design Concept of a Semi-Autonomous UGV with Omni-directional Mobility and Auto-Target Tracking”, *Florida Conference on Recent Advances in Robotics, Boca Raton, Florida, May 2012*
- Daniela Chavez Guevara and \***Jong-Hoon Kim**, “ScouterBot: Design of a Low Cost Autonomous Ball-boy Robot”, *Florida Conference on Recent Advances in Robotics, Boca Raton, Florida, May 2012*

### GRANTS AND SUPPORTED PROGRAMS

#### Current Successful Grants that I was involved (about \$12M)

- RET SITE: Research Experience for Teachers in Cyber-enabled technologies  
Source of Support: NSF  
Role : Senior Investigator (PI : Niki Pissinou)  
Total Award Amount: \$ 498,000  
Total Award Period Covered: 08/01/2014 - 07/31/2017
- TeleBot: Telepresence robot for Disable Veteran and Police Officer  
Source of Support: Private Donation - Lt. Cmdr Jeremy Robins, US Navy  
Role : Principal Investigator  
Total Award Amount: \$ 20,000  
Total Award Period Covered: 04/27/2012

## Past Grants

- UniversityCity Prosperity Project  
Source of Support: US Department of Transportation  
Role : Co-Principal Investigator (PI : N.Rishe)  
Total Award Amount: \$ 11,397,120  
Total Award Period Covered: Jan. 2014 - Dec. 2016
- Google Computer Science for High School - 2013 (Google - CS4HS )  
Source of Support: Google Inc.  
Role : Principal Investigator  
Total Award Amount: \$ 13,500  
Total Award Period Covered: 04/01/2013 - 03/31/2014
- REU SITE: ASSET: Research Experiences for Undergraduates in Advanced Secured Sensor Enabling Technologies  
Source of Support: NSF  
Role : Senior Investigator (PI : Niki Pissinou)  
Total Award Amount: \$ 359,997  
Total Award Period Covered: 01/01/2013 - 12/31/2015
- Border Surveillance Using Wireless Sensor Networks  
Source of Support: Korea-Tunisia cooperation  
Role : Co-Principal Investigator ( Korean-PI: Sunshin An, Tunisian-PI : Noureddien Boudriga)  
Total Award Amount: \$300,000 (\$150,000 for Korea, \$150,000 for Tunisia)  
Total Award Period Covered: Oct. 2012 Sept. 2015

## Grants in Preparation

- NRI : Human Robot Interaction through Telepresence Robots for Law Enforcement  
Source of Support: NSF  
Role : Principal Investigator

## PROFESSIONAL EXPERIENCE

### Employment Experience

**Kent State University**, Kent, Ohio, U.S.A.

*Department of Computer Science*

**Since January 2017**

- Assistant Professor
- Director of Advanced Tele-Robotics Laboratory

**MT-Coding Instructor Academy**, Seoul, South Korea.

*MT-Coding Instructor Academy*

**July 2016 to December 2016**

- Member of the Curriculum Committee
- Senior Lecturer

**ArtXpresso L.L.C**, Seoul, South Korea.

*ArtXpresso L.L.C*

**August 2014 to December 2016**

- Chief Technology Advisor (CTA)

**Florida International University**, Miami, U.S.A.

*School of Computing and Information Sciences*

**January 2012 to August 2014**

- Visiting Assistant Professor
- Director of Discovery Lab

**I-BUS** (IBM business partner), Seoul, Korea

*CRMS Project*

**April 2003 to September 2004**

- Objective: Consulting and developing stable system environment for Crisis Risk Management System (CRMS) of Woori Bank, Korea
- Role: A project system supervisor
- Operating System: Aix5.0 on IBM pServer, Win2000 on IBM PC server.
- Application: CICS-6000, DB2, IIS-5.0
- Program language: C++, ASP

*NAPS Project*

**March 2002 to January 2003**

- Objective: Developing integrated online control system for New Auto Parts System (NAPS) of Hyundai Automobile Company, Korea
- Role: A project system supervisor
- Operating System: OS/400 on AS400 IBM mid-range system, Win2000 on IBM PC server.
- Application: AS-400 CICS, AS-400 Web-sphere,
- Program language: RPG (AS 400), Java(end user PC)

**IBM Korea**, Seoul, Korea

*NICES Project*

**April 2000 to February 2002**

- Objective: Developing a new main operating system of KyoBo Life Insurance Company.
- Role: A system administrator and trouble shooter
- Operating System: OS/390 on S390 IBM mainframe, AIX 4.3 on IBM Unix machine, NT4.0 on IBM PC server, Windows 2000 on Compaq PC server, End user PC(Windows95,98,and 2000).
- Application: Host CICS, CICS 6000, NT CICS Envy Server, DB2, IBM HTTP Server, CTG, Cache Server, IIS4.0.
- Program language: Cobol (Mainframe), Java(end user PC), Delphi(administrating for servers)

**Shine W&D** (Windows and Doors), TaeBack, Kangwon, Korea

*Auto-Quotation Project*

**January 2000 to March 2000**

- Objective: Developing an automated quotation system of Shine W&D Company.
- Role: A system administrator and developer
- Operating System: Windows NT4.0, Windows98
- Application: MSSQL6
- Program language: Delphi

**Research Experience**

**ArtXpresso L.L.C**, Seoul, South Korea

*ArtXpresso L.L.C*

**Since August 2014**

- Conducting an advanced motion tracking project as a CTA.

**Florida International University**, Miami, U.S.A.

*Director of Discovery Laboratory*

**January 2012 to August 2014**

- Conducted several projects as a director of Discovery Laboratory in School of Computing and Information Sciences

**Robotics Research Laboratory, Louisiana State University, Baton Rouge, Louisiana USA**

*Research Assistant*

**August 2006 to December 2011**

- Research Assistant at the Robotics Research Laboratory, with Dr. S.S. Iyengar, Spring 2007 - December 2011
- Research Assistant at the CPU Design Laboratory, with Dr. Lu Peng, in Fall 2006

### Teaching Experience

**Kent State University, Kent, Ohio, U.S.A.**

*Assistant Professor*

**Since January 2017**

- Spring-2017 : CS35201 - Computer Communication Networks

**DongSeo University, Pusan, South Korea.**

*Instructor for the Special Intensive Class on Telerobotics-Multi-Rotor UAV, Drone* **August 21th - 24th, 2015**

- 28 undergraduate students with hand-on experience with UAV drone
- Remote controller design, Simple protocol design, Open source Multi-Rotor UAV project - MultiWii
- Sponsored by CK Mechatronics Program

**Florida International University, Miami, U.S.A.**

*Organizer and Instructor for Quad-Copter Workshop*

**August 23th - 25th, 2014**

- Teaching 10 high/undergraduate students for building a quad-copter from scratch (3D design, 3D printing, Arduino based flight control, and processing based control station design)
- Sponsored by Discovery Lab & Ultimate Software Inc.

*Organizer and Instructor for CS4HS Workshop*

**June 13th - 15th, 2013**

- Teaching K-12 teacher and students with hand-on experience with embedded system and robotics components
- CS4HS Workshop sponsored by Discovery Lab & Google Inc.

*Organizer and Instructor for Robotics Workshop*

**June 28th - 29th, 2012**

- Twenty five high/middle school students participated
- Build a Arduino based line follower robot
- Robotics Summer Camp sponsored by Discovery Lab

**Louisiana State University, Baton Rouge, Louisiana USA**

*Teaching Assistant*

**August 2008 to December 2011**

- Instructor for CSC2700 : Introduction to Robotics - Fall 2011
  - Designed the two credit course with lab for undergraduate students
  - Design and implement simple autonomous robots
  - Developed supplementary course materials

- Teaching Assistant for CSC4700 Embedded Systems - Spring 2008
  - Assisted preparing class lectures and graded homework and exams

*Instructor for Louisiana 4-H Summer Camp : Robotics*      **August 2009 to August 2011**

- Summer 2009, 2010, and 2011
- Teaching K-12 students about basic robotics
- The best selective program in 2011 Summer Camp
- Louisiana 4-H at LSU AgCenter

GRADUATE &  
UNDERGRADUATE  
MENTORING

- Mentored four MS students: Hossain Sheikh(FIU), Karthik Nagabandi(LSU), Lohit Penumbaku(LSU), and Sandeep Bandi (LSU)
- Advised and serviced one MS student thesis committee: Sarat Paluri (Southern University)
- Undergraduate Student Achievement: Irvin Cardenas(FIU) was recognized by the Great Minds in STEM at the “Class of 2013 HENAAC Scholars” and received Booz Allen Hamilton Scholarships on October 5th, 2013.

AWARDS

Florida International University

- Director’s National Visibility Award, School of Computing and Information Science, FIU, Dec. 7th, 2013

International Conference on Industrial Technology (IEEE- ICIT 2010)

- Student Scholarship of the IEEE-IES Student Activities Committee for travel awards

Louisiana State University

- LSU Department of Computer Science Conference Travel Award, 2009 - 2010.
- LSU Graduate School Conference Travel Award, 2010.

Seoul National University of Science and Technology

- Dean’s List, Recipient of Computer Science and Engineering Scholarship, 2003 - 2004

CERTIFICATION

- National Technical Qualification Holder - Information Processing (2004)
- Microsoft Certified System Engineers, MCSE (1999)
- The Microsoft Certified Professional, MCP (1999)

DEMONSTRATIONS

**Selected Exhibitions**

- Exhibit TeleBot: Tele-presence humanoid robot for law enforcement, Miami MakerFaire, Miami, US, Nov. 16th, 2013.
- Exhibit an autonomous target tracking turret system, The 22st international conference on High Performance Computing (HPC), networking, storage and analysis. New Orleans, Louisiana, US, 2010
- Exhibit an autonomous pipeline inspection robot, The 21st international conference on High Performance Computing (HPC), networking, storage and analysis. Portland, Oregon, US, 2009

**Selected Press Coverage**

- “14 innovations that improved the world in 2014” at [www.mashable.com](http://www.mashable.com)
- “Real-Life ‘ROBOCOP’ helps wounded officers & Vets get back to work”, in **National Fox News “America’s Newsroom”**, Feb. 12th 2014.
- TeleBot: Discovery Lab’s Telebot Featured at Miami Maker Faire, in **Miami Herald**, Nov. 17th 2013.
- Televisе an autonomous target tracking turret system on TV series, Sons of Guns, in **Discovery Channel**, March 2011.

## SERVICE

### Member

- Institute for Electrical and Electronics Engineers (IEEE), Member, 2009–present

### Journal and Conference Reviewer

- International Journal of Intelligent Computing and Cybernetics - **IJICC**
- International Journal of Advanced Robotic Systems - **IJARS**
- International Research Journal for Automation in Construction - **AUTCON**
- International Journal of Precision Engineering and Manufacturing - **JPEM**
- Journal of Sensor and Actuator Networks -**JSAN**
- IEEE International Conference on Wireless Communications, Networking and Information Security - **IEEE - WCNIS**
- IEEE International Conference on Robotics and Automation - **IEEE - ICRA**

### Conference Service

- Session chair for invited session: “ Robots and Mobile Machines ”, *The 37th Annual Conference of the IEEE Industrial Electronics Society(IEEE- IECON 2010)*, Phoenix, Arizona, US.

### Community Service

- Judge for South Florida SECME Olympiad (VEX Robotic Competition) : Judged 11 VEX Robotic matches on Jan 26, 2013 at Miami-Dade College, North Campus
- Judge for First Tech Challenge Robotic Competition : Reviewed and evaluated 12 Robotic projects on Jan 19, 2013 at Mast Academy, Miami

## REFERENCES

**Dr. S.S. Iyengar** (e-mail: iyengar@cis.fiu.edu; phone: +1-305-348-3947)

- Ryder Professor and Director, School of Computing and Information Science, Florida International University
- ◇ School of Computing and Information Sciences, Florida International University , 11200 SW 8th St, ECS 351, Miami, FL 33199

**Dr. Noureddine Boudriga** (e-mail: noure.boudriga2@gmail.com; phone: +216-98-645-073)

- Professor and Director, The Communication Networks and Security Research Laboratory, The University of 7 November at Carthage
- ◇ Sup'Com, University of the 7 th of November at Carthage, Tunisia

**Dr. Nagarajan Prabakar** (e-mail: prabakar@cis.fiu.edu; phone: +1-305-348-2033)

- Associate Professor, School of Computing and Information Science, Florida International University
- ◇ School of Computing and Information Sciences, Florida International University , 11200 SW 8th St, ECS 382, Miami, FL 33199

**Dr. Sukhamay Kundu** (e-mail: kundu@csc.lsu.edu; phone: +1-225-578-2246)

- Associate Professor, Computer Science and Engineering Division, School of Electrical Engineering and Computer Science, Louisiana State University
- ◇ Louisiana State University, 233 Electrical Engineering Building, Baton Rouge, LA 70803

**Dr. Seung-Jong Park** (e-mail: sjpark@csc.lsu.edu; phone: +1-225-578-2209)

- Associate Professor, Computer Science and Engineering Division, School of Electrical Engineering and Computer Science, Louisiana State University
- ◇ Louisiana State University, 2160 Digital Media Center, Baton Rouge, LA 70803