Pratool Bharti

CONTACT
INFORMATION

Department of Computer Science
Psychology-Computer Science
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Nothern Illinois University
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PRIMARY
RESEARCH
INTERESTS

Context-Aware Sensor Fusion, Embedded Machine Learning/ Artificial Intelligence, Computer Vision and Neural Networks

SECONDARY
RESEARCH
INTERESTS

Smart and Connected Healthcare, Intelligent Transportation Systems, Pervasive Systems, Participatory Sensing

PROFESSIONAL
EXPERIENCE

Assistant Professor - Department of Computer Science
Northern Illinois University (Aug, 2019 — Present).

Research & Development Manager - Machine Learning Division
Communication Concepts Integration Inc., Odessa (Jun, 2017 — Present)

Artificial Intelligence Graduate Student Ambassador
Intel Corp. (Dec, 2016 — Dec, 2017).

Research/ Teaching Assistant - Department of Computer Science & Engineering
University of South Florida, Tampa (Aug, 2015 — Dec, 2017).

Research Intern
SmartCare Systems, St. Charles (May, 2015 — Aug, 2015).

Research/ Teaching Assistant - Department of Computer Science
Missouri University of Science and Technology, Rolla (Jan, 2014 — May, 2015).

Systems Engineer - Health Insurance Division
TATA Consultancy Services, Chennai, India (Aug, 2010 — Dec, 2013).

EDUCATION

University of South Florida, Tampa, FL, U.S.A.
Ph.D. in Computer Science and Engineering, Dec 2017
Dissertation: Context Based Human Activity Recognition using Multi-modal Wearable Sensors
Advisor: Dr. Sriram Chellappan.

Missouri University of Science and Technology, Rolla, MO, U.S.A.
Ph.D. Student in Computer Science, Jan, 2014 - May, 2015 (Later transferred to USF, Tampa)

Kalyani Government Engineering College, Kalyani, West Bengal, India
B-Tech. in Computer Science & Engineering, Aug, 2006 - Jul, 2010.

AWARDS

IEEE PerCom Conference **Travel Grant** Award, 2015.
Tata Consultancy Services **Gems** Award, [2011, 2013].
Merit-and-Means full Scholarship award for Undergraduate Study, (Jun 2006 - Jun 2010).

REFEREED
JOURNAL/
MAGAZINE
PUBLICATIONS

Pratool Bharti, Debraj De, Sriram Chellappan and Sajal K. Das, "HuMAn: Complex Activity Recognition with Multi-modal Multi-positional Body Sensing", accepted to appear in `IEEE Transactions on Mobile Computing (TMC)`, 2018.

Pratool Bharti, Anurag Panwar, Ganesh Gopalakrishna, and Sriram Chellappan, "WatchDog: Detecting Self-Harming Activities from Wrist Worn Accelerometers", in `IEEE Journal of Biomedical and Health Informatics (J-BHI)`, Vol 22/3, May 2018.

Anthony Windmon, Mona Minakshi, **Pratool Bharti**, Sriram Chellappan, Marcia Johanssen, Bradlee Jenkins and Ponrathi Athilingam, "TussisWatch: A Smart-phone System to Identify Cough Episodes as Early Symptoms of Chronic Obstructive Pulmonary Disease and Congestive Heart Failure", accepted to appear in `IEEE Journal of Biomedical and Health Informatics (J-BHI)`, 2018.

Kaoutar Ben Ahmed, Bharti Goel, **Pratool Bharti**, Sriram Chellappan and Mohammed Bouhorma, "Leveraging Smartphone Sensors to Detect Distracted Driving Activities", accepted to appear in `IEEE Transactions on Intelligent Transportation Systems`, 2018.

Srinivas Thandu, **Pratool Bharti**, Sriram Chellappan and Zhaozheng Yin, "Leveraging Multimodal Smartphone Sensors for Ranging and Estimating the Intensity of Explosion Events", in `Special Issue on Emerging Technologies in Pervasive Sensing, Journal of Pervasive and Mobile Computing (PMC)`, Vol 20/1, Sept 2017.

Debraj De, **Pratool Bharti**, Sajal K. Das and Sriram Chellappan, "Multimodal Wearable Sensing for Fine-Grained Activity Recognition in Healthcare", in `IEEE Internet Computing (IC)`, Vol 19/5, Sept-Oct 2015.

REFEREED CONFERENCES/ WORKSHOP PUBLICATIONS

Pratool Bharti, Arup Kanti Dey, Sriram Chellappan and Theresa Beckie, "An Experimental Investigation Comparing Age-Specific and Mixed-Age Models for Wearable Assisted Activity Recognition in Women", accepted to appear in `Proc. of 12th International Conference on Health Informatics (HealthInf)`, Prague, Czech Republic, 2019.

Mona Minakshi, **Pratool Bharti** and Sriram Chellappan, "Leveraging Smart-Phone Cameras and Image Processing Techniques to Classify Mosquito Species", in `Proc. of 15th EAI International Conference on Mobile and Ubiquitous Systems: Computing, Networking and Services (MobiQuitous)`, New York City, Nov 2018.

Bharti Goel, Arup Kanti Dey, **Pratool Bharti**, Kaoutar Ben Ahmed and Sriram Chellappan, "Detecting Distracted Driving Using a Wrist-Worn Wearable", in `Proc. of Workshop on Sensing Systems and Applications Using Wrist Worn Smart Devices (WristSense) in conjunction with IEEE Intl. Conf. on Pervasive Computing and Communications (PerCom)`, Athens, Mar 2018.

Mona Minakshi, **Pratool Bharti**, and Sriram Chellappan, "Identifying Mosquito Species using Smart-Phone Cameras", in `Proc of European Conference on Networks and Communications (EuCNC)`, Oulu, Finland, June 2017.

Anurag Panwar, Mariam Al-Lami, **Pratool Bharti**, Sriram Chellappan and Joel Burken, "Determining the Effectiveness of Soil Treatment on Plant Stress using Smart-phone Cameras", in `Proc. of IEEE Intl. Conf. on Selected Topics in Mobile and Wireless Networking (MoWNet)`, Cairo, Egypt, Apr, 2016.

Srinivas Thandu, Levi Malott, **Pratool Bharti** and Sriram Chellappan, "On the Feasibility of Leveraging Smartphone Accelerometers to Detect Explosion Events", in `Proc. of IEEE Intl. Conf. on Mobile Data Management (MDM)`, Pittsburgh, June 2015.

Levi Malott, **Pratool Bharti**, Nicholas Hilbert, Sriram Chellappan and Ganesh Gopalakrishna, "Detecting Self-harming Activities with Wearable Devices", in `Proc. of Workshop on Sensing Systems and Applications Using Wrist Worn Smart Devices (WristSense) in conjunction with IEEE Intl. Conf. on Pervasive Computing and Communications (PerCom)`, St. Louis, Mar 2015.

EXPERIENCE WITH ASSISTING MY ADVISOR IN PROPOSALS	"PFI-RP: A Multi-Disciplinary Approach to Detecting Adolescent Online Risks" - National Science Foundation - $766,000 (Sep 2018 - Aug 2021) - Funded (IIP #1827700).
	"SaTC: CORE: Small: A Privacy-Preserving Meta-Data Analysis Framework for Cyber Abuse Research - Foundations, Tools and Algorithms" - National Science Foundation - $514,333 (Sep 2017 - Aug 2020) - Funded (CNS #1718071).
	"Trial of Technology-Assisted Lifelong CArdiac REhabilitation for Women (TOTAL CARE)" - National Institute of Health (NHLBI R01) - Under Review.
TEACHING INTERESTS	**Core courses** - Analysis of Algorithms, Computer Architecture, Operating Systems, Automata, Database Systems, Computer Networks, Data Structures and Programming **Specialized courses** - Machine Learning/ Artificial Intelligence, Pervasive Computing and Computer Vision
TEACHING AND MENTORING EXPERIENCE	**Teaching Assistant** - Introduction to Operating Systems (UG), Spring, Fall 2014 Prepared lectures and projects focusing on the implementation of process scheduling techniques, threading, mutexes and socket programming for 100+ freshman and sophomore level UG student. Also, created and graded course assessments.
	Teaching Assistant - Advance Network Security (Grad), Spring 2015 Covered concepts in network security in significant depth i.e. Internet, sensor/ RFID networks, peer-to-peer networks, vehicular networks, and human-factors in cyber security. Assisted the instructor in preparing and evaluating course materials, evaluating assignments, holding office hours, and grading.
INVITED TALKS/ PANEL DISCUSSION	**"Identifying Mosquito Species Using Smartphone Cameras"** - Artificial Intelligence session organized by Intel Corp. at ACM SIGCSE (Special Interest Group of Computer Science Education) Conference, Seattle, WA (Mar 2017).
	"Opportunities and Challenges in Implementing/Deploying AI" - Artificial Intelligence panel discussion organized by Intel Corp. at South by Southwest (SXSW) Conference & Festivals, Austin, TX (Mar 2017).
	"Complex activity recognition with Multi-Modal multi-positional body sensing" - 6th International Conference on Biostatistics and Bioinformatics, Atlanta, GA (Nov 2017).
PROFESSIONAL COMMITTEES	**NSF Panelist**: SBIR/ STTR programs for Artificial Intelligence, Machine Learning, Natural Language Processing Technologies, [2017, 2018].
	TPC Member: 13th International Conference on Wireless Algorithms, Systems and Applications (WASA), 2018.
	Reviewer Committee: IEEE Trans. on Mobile Computing (TMC), IEEE Trans. on Intelligent Transportation Systems (T-ITS), IEEE Trans. on Network Science and Engineering (TNSE).
REFERENCES	**Dr. Sriram Chellappan** Associate Professor - Dept. of Computer Science and Engineering, University of South Florida, ENB, 4202 E. Fowler Avenue, Tampa, FL 33620, USA, Phone: 813-974-1379, Fax: 813-974-5456, Email: sriramc@usf.edu.
	Dr. A. B. M. Alim Al Islam Associate Professor - Dept. of Computer Science and Engineering, Bangladesh University of Engineering and Technology, New Academic Building, West Polashi, Dhaka 1000, Bangladesh, Phone: 880-2-9665650/7109, Email: alim_razi@cse.buet.ac.bd.
	Dr. Yasin Yilmaz Assistant Professor - Dept. of Electrical Engineering, University of South Florida, ENB, 4202 E. Fowler Avenue, Tampa, FL 33620, USA, Phone: 813-974-4788, Email: yasiny@usf.edu.