Asif Salekin

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EXPERIENCE

SYRACUSE UNIVERSITY | Tenure Track Assistant Professor
Department of Electrical Engineering and Computer Science
August 2019 - Now | Syracuse, New York, USA.

SUNY Upstate Medical University | Voluntary Faculty Assistant Professor
Department of Psychiatry
May 2020 - Now | Syracuse, New York, USA.

NOKIA BELL LABS | Research Intern
BHAG Realization Lab
June 2018 - Aug 2018 | Murray hill, New Jersey, USA.

BOSCH RESEARCH AND TECHNOLOGY CENTER | Research Intern
Human-Machine Interaction Lab | Audio Analytics and Deep Learning
May 2017 - Oct 2017 | Palo Alto, California, USA.

UNIVERSITY OF VIRGINIA | Research Assistant
May 2014 - Present | Charlottesville, VA

AHSANULLAH UNIV. OF SCIENCE & TECH. | Lecturer
Oct 2012-Aug 2013 | Dhaka, Bangladesh

BRAC UNIVERSITY (BRACU) | Lecturer
May 2012 - Oct 2012 | Dhaka, Bangladesh

EDUCATION

UNIVERSITY OF VIRGINIA | PhD in Computer Science
Advisor: Professor John A. Stankovic | August 2019

UNIVERSITY OF VIRGINIA | Masters of Computer Science (MCS)
May 2016 | Cum. GPA: 3.98 / 4.0

BANGLADESH UNIV. of ENGG. & TECH. | BSc in Computer Science & Engineering
May 2012 | Cum. GPA: 3.86 / 4.0

RESEARCH INTERESTS

Machine Learning, Connected and Mobile Health, Internet of Things (IoT), Pervasive and Ubiquitous Computing, Human-Machine Interaction.

AWARDS

IAAI Deployed Application Award , The Thirty-Third Annual Conference on Innovative Applications of Artificial Intelligence (IAAI-21).

Graduate Student Award for Outstanding Research , UVA Department of Computer Science, 2018

Nominated for best paper award , (AsthmaGuide) at Wireless health, 2016

Selected for Third Annual Public Days Showcase Event
The Public Days showcase highlights exemplary scholarship, research, and creative work of the University's undergraduate and graduate students, as well as post-docs. Our project, AsthmaGuide, was selected to represent the highest achievements of scholarship, research, and creative work from undergraduate and graduate students across Grounds.

Student Travel Award : SenSys Student Grant, NSF, 2015, and Wireless Health Travel Grant, NIH, 2014

FUNDING AND GRANTS

Title: Collaborative Research: SCH: Psychophysiological Sensing to Enhance Mindfulness-Based Interventions for Self-Regulation of Opioid Cravings
Supporting agency: National Science Foundation (NSF)
PI: **Asif Salekin**
Co-PI: Dessa Bergen-Cico
Total budget amount (Syracuse University): $756,356
Performance period: 2022-2025
This project focuses on developing and testing innovative technologies to aid sustainable recovery of opioid use disorders by in-home craving and psychological cues monitoring and generation of adaptive, personalized, and just-in-time mindfulness-based interventions (MBIs). No overlap with the current project

Title: The influence of contextual and constitutional emotional processes on speech motor control and speech motor learning in early childhood stuttering, Inst. no. SP-31861-2
Supporting agency: 1R21DC018103-01A, National Institute on Deafness & Other Communication Disorders/NIH/DHHS
PI: Victoria Tumanova
Co-investigator: **Asif Salekin**
Total Direct Costs (Syracuse University): $275,000
Performance period: 03/2021-02/2023
The goals of this project are to advance the understanding of stuttering development in preschool-age children and inform future fluency treatment. Specifically, the researchers are interested in how different aspects of emotional reactivity influence children's speech motor control and speech motor learning.

Title: Developing a Clinical Speech Recognition System for Childhood Speech Disorders
Supporting agency: Syracuse University Collaboration for Unprecedented Success and Excellence (CUSE)
PI: Jonathan L Preston
Co-PI: **Asif Salekin**
Project Period: 2021-2023
Total Direct Costs: $22,000
The goal of the project is to develop an automated software platform for accurate classification and feedback of children's articulation errors. It has high significance and impact for potentially improving the ability to effectively improve a speech sound error (/r/) that is challenging to remediate.

PEER REVIEWED FULL PAPERS | PUBLISHED

Understanding autism: the power of EEG harnessed by prototypical learning.
Proceedings of the Workshop on Medical Cyber Physical Systems and Internet of Medical Things. 2021.
Asif Salekin , Natalie Russo.

HirePreter: A Framework for Providing Fine-grained Interpretation for Automated Job Interview Analysis
Proceedings of the Workshop on Applied Multimodal Affect Recognition, 2021.
Wasifur Rahman, Sazan Mahbub, **Asif Salekin** , Md Kamrul Hasan and Ehsan Hoque.

Preclinical Stage Alzheimer's Disease Detection Using Magnetic Resonance Image Scans
The Thirty-Third Annual Conference on Innovative Applications of Artificial Intelligence **(IAAI-21)** .
Fatih Altay, Guillermo Ramón Sánchez, Yanli James, Stephen V. Faraone, Senem Velipasalar, **Asif Salekin** .

Exploring Inherent Sensor Redundancy for Automotive Anomaly Detection
The 57th Design Automation Conference **(DAC 2020)** .
Tianjia He, Lin Zhang, Fanxin Kong, and **Asif Salekin** .

A Real-Time Audio Monitoring Framework with Limited Data for Constrained Devices
The 15th International Conference on Distributed Computing in Sensor Systems **(DCOSS 2019)** .
A. Salekin , S. Ghaffarzadegan, Z. Feng, and J. Stankovic

A Weakly Supervised Learning Framework For Detecting Social Anxiety And Depression
ACM Interactive, Mobile, Wearable, and Ubiquitous Technologies (IMWUT), Vol. 2, Issue. 2 **(Ubicomp 2018)** .
A. Salekin , J. Eberle, J. Glenn, B. Teachman, J. Stankovic

Distant Emotion Recognition
ACM Interactive, Mobile, Wearable, and Ubiquitous Technologies (IMWUT), Vol. 1, Issue. 3 **(Ubicomp 2017)** .
A. Salekin , Z. Chen, M. Ahmed, J. Lach, D. Spruijt-Metz, K. Haye, B. Bell, J. Stankovic

DAVE: Detecting Agitated Vocal Events

IEEE/ACM Conference on Connected Health: Applications, Systems and Engineering technologies (CHASE), 2017.
A. **Salekin** , H. Wang, K. Williams, J. Stankovic

AsthmaGuide: An Asthma Monitoring and Advice Ecosystem
IEEE Wireless Health 2016. **(Nominated for best paper)**
Co-first authors (**A. Salekin** , H. Ra), H. Yoon, J. Kim, S. Nirjon, D. Stone, S. Kim, J. Lee, S. Son and J. Stankovic

Detection of Chronic Kidney Disease and Selecting Important Predictive Attributes
IEEE International Conference on Healthcare Informatics (ICHI), 2016.
A. **Salekin** , J. Stankovic

ARASID: Artificial Reverberation-Adjusted Indoor Speaker Identification Dealing with Variable Distances
International Conference on Embedded Wireless Systems and Networks (EWSN), 2019 (accepted).
Z. Chen, M. Ahmed, **A. Salekin** , J. Stankovic

MOBI-COG: A Mobile Application for Instant Screening of Dementia Using the Mini-Cog Test
Wireless Health 2014.
S. Nirjon, I. Emi, A. Mondol, **A. Salekin** , and J. Stankovic

Extracting and Ranking Web Communities
International Conference on Web Intelligence, Mining and Semantics (WIMS), 2013.
A. **Salekin** , J. Tabassum, M. Hasan

A Novel Approach for Constructing Emulator for Microsoft Kinect XBOX 360 Sensor in the .NET Platform
International Conference on Intelligent Systems, Modelling and Simulation (ISMS), 2013.
MD. Rahman, S. Rahman, R. Hasan, R. Noel, **A. Salekin** , H. Ferdous

A Novel Clustering-Based Ensemble Classification Model for Block Learning
International Conference on Pattern Recognition Applications and Methods (ICPRAM), 2013.
MD. Rahman, MD. Rahman, **A. Salekin** , S.H. Chowdhury, S.A. Anik

A Novel Approach for Generating Clustered Based Ensemble of Classifiers
International Journal of Machine Learning and Computing, Vol. 3, Issue. 1, Page 137, 2013.
MD. Rahman, MD. Rahman, **A. Salekin** , A.S. Andalib

Composite Pattern Matching in Time Series
International Conference on Computer and Information Technology (ICCIT), 2012.
A. **Salekin** , M. Islam, MD. Rahman

Pattern matching in time series using combination of neural network and rule based approach
International Conference on Electrical and Computer Engineering (ICECE), 2012.
A. **Salekin** , MD. Rahman

Novel approaches for detecting fabric fault using artificial neural network with k-fold validation
International Conference on Computer and Information Technology (ICCIT), 2012.
A.S. Andalib, **A. Salekin** , M.R. Islam, M. Abdulla-Al-Shami

PATENT

System And Method For Audio Event Detection In Surveillance Systems
A. **Salekin** , S. Ghaffarzadegan, Z. Feng (2019)
U.S. Patent Application No. 16/976,462.
Link: https://patents.google.com/patent/US20210005067A1/en

POSTERS AND DEMOS

I Can Hear it in Your Voice: A Weakly Supervised Machine Learning Framework for Detecting Social Anxiety and Depression Symptoms from Features of Speech
ABCT's 52nd Annual Convention, 2018.
A. **Salekin** , J. Eberle, J. Glenn, B. Teachman, J. Stankovic

Poster Abstract: LifeMaps - An Automated Diary System Based on the Structure of Lives
SenSys, 2016.
A. Mondol, H. Ra, **A. Salekin** , H. Yoon, M. Kubovy, S. Son, J. Stankovic

Poster Abstract: Software architecture for efficiently designing cloud applications using node.js
14th Annual International Conference on Mobile Systems, Applications, and Services Companion, 2016.

H. Ra, H. Yoon, **A. Salekin** , J. Lee, J. Stankovic, S. Son

Demo Abstract: KinVocal: Detecting Agitated Vocal Events
SenSys, 2015.
A. Salekin , H. Wang, J. Stankovic

Demo Abstract: AsthmaGuide: An Ecosystem for Asthma Monitoring and Advice
SenSys, 2015.
H. Ra, **A. Salekin** et al.

A natural user interface classroom based on Kinect
IEEE Learning Technology Newsletter, Volume 13, October 2011.
R. Noel, **A. Salekin** , R. Islam, S. Rahaman, R. Hasan, H.S. Ferdous

MENTORING EXPERIENCE

Supervising five doctoral Students.

Supervising four master's Students.

Supervised two Master's student for Internship Credit (CIS 670).

Supervising two undergrad students in research.

Undergraduate student advisor for 18 undergraduate students.

TEACHING EXPERIENCE

Instructor
Course: Instructor: Ubiquitous Computing (CIS 700)
Spring 2021 (12 Students)

Instructor
Course: Machine Learning for IoT Applications (CIS 700)
Spring 2020 (15 Students)

Instructor
Course: Graduate Level Design and Analysis of Algorithm (CIS 675)
Fall 2019 (128 Students)
Fall 2020 (32 Students)

Instructor
Course: ML Nanocourse series, 2020.
Two lectures on Machine Learning for Health.
SUNY Upstate Medical University

Invited lecturer: Two lectures on Machine Learning for IoT and CPS
Course: The Internet of Trillions of Things (Graduate level), UVA, Fall 2018

Invited lecturer: A lecture on Smart Connected Health
Course: Wireless Sensor Networks (Undergraduate level), UVA, Fall 2014

Mentoring (Graduate level)
Two first year PhD students (2015, 2017)
Three Masters students (2014, 2016, 2018)

Graduate Teaching Assistant
Course: Algorithm
UVA, Fall, 2013 and Spring, 2014
Hold office hours and graded homework and exams for over 300 students

Lecturer
Ahsanullah University of Science and Technology (AUST), 2012-2013
Courses: Algorithm, Network Programming, Operating Systems.
Responsibility: lecture planning, taught and instructed courses, assessing students, holding office hours, invigilating
examinations

Lecturer
BRAC University (BRACU), 2012
Courses: Operating Systems, Introduction to Programming Language: Java.
Responsibility: lecture planning, taught and instructed courses, assessing students, holding office hours, invigilating examinations

SELECTED TALKS

Invited Talk: 'Understanding Autism: The Power of EEG Harnessed by Prototypical Learning'
Medical Cyber Physical Systems and Internet of Medical Things Workshop, 2021.

Invited Talk: 'Ubiquitous and human-centric computing in healthcare'
Research Exposure in Socially Relevant Computing (RESORC), Organized by Syracuse University in partnership with Google, 2021.

Invited Lecture: 'Adaptive Machine Learning for Human-Centric IoT Applications'
IEEE Syracuse Section
Engineering in Medicine and Biology Society Chapter Event, 2020

Invited Talk: 'Machine Learning for Constrained Devices with Limited Training Data'
University of Rochester, 2019

Invited Talk: 'Adaptive Machine Learning for IoT'
Indiana University, Bloomington, 2019

Invited Talk: 'Adaptive Machine Learning for IoT'
Florida State University, 2019

Workshop Presentation: 'Machine Learning for Constrained Devices with Limited Training Data'
International Workshop on NEXT-GENERATION CYBER-PHYSICAL SYSTEMS, 2018

Invited talk 'Human Machine Interaction', **BR Lab, Nokia Bell Labs**, NJ, USA, 2018

Invited talk 'Machine Learning for IOT and CPS', **ENSA Lab, Nokia Bell Labs**, NJ, USA, 2018

Full Paper Presentation ' Distant Emotion Recognition', **Ubicomp**, 2017

Full Paper Presentation 'Detecting Agitated Vocal Events', IEEE CHASE, July 2017

Invited talk 'Novel Feature Modeling for Audio Analytics', **BOSCH Research and Technology Center**, CA, USA, 2017

Poster Presentation 'LifeMaps - An Automated Diary System Based on the Structure of Lives', **Sensys**, 2016

The Public Days showcase event 'AsthmaGuide : A Complete Asthma Monitoring System', 2016

Full Paper Presentation 'AsthmaGuide: A smartphone and cloud based asthma system', IEEE Wireless Health 2016

Full Paper Presentation 'Chronic kidney disease detection', IEEE ICHI, 2016

Poster and Demo Presentation 'Detecting Agitated Vocal Events', **SenSys**, 2015

Poster and Demo Presentation 'AsthmaGuide: An Ecosystem for Asthma Monitoring and Advice', **SenSys**, 2015

Project Demonstration UVA Open House, 2014, 2015, 2016, 2017

REFEREE/REVIEWER

Associate Editor Journal: ACM Transactions on Computing for Healthcare

TCP member PerIoT 2020 and 2021

Reviewer:
CVPR 2021
IMWUT (Ubicomp) 2017, 2018, 2019, 2020
ACM Transactions on Cyber-Physical Systems 2019
IFIP Performance 2018
ISSRE 2018
Heliyon 2018
DSN 2019

NSF: SERVICE

Served on the Phase I: Big Data and Advanced Analytics (Virtual) SBIR review panel (2020)

Served on NSF Multimodal Sensor Systems for Precision Health Enabled by Data Harnessing, Artificial Intelligence, and Learning (SenSE) panel (2020)

SYRACUSE UNIVERSITY: SERVICE

Served on the CUSE grant review panel (2020)

Developed one position for the second round of cluster hiring competition in Aging, Health, and Neuroscience.

Acting as an undergraduate student advisor for 18 undergraduate students.

Contributed as a part of CISE and ECE QE1 exam 2020, 2021 (PhD Qualifying examination) committee, PhD proposal, and PhD defense committees.

VOLUNTEERING EXPERIENCE

Student Volunteer : Wireless Health 2014, UVA Engineering Alumni Reunions 2014, Hosting Faculty Candidates (2015 & 2016), BUET CSE Festival (2008 & 2011), Bangladesh National Math Olympiad 2008

Co-founder and General Secretary : Association of Bangladeshi Students UVA, 2016-2017

Community Action : Mentored two underprivileged students in their studies, 2014-2016