

# RITTIKA SHAMSUDDIN, ASSISTANT PROFESSOR

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Oklahoma State University  
Department of Computer Science  
212 Math Sciences  
Stillwater, OK 74078

## **Research Interests**

Machine Learning (ML)  
ML Knowledge Incorporation  
ML Domain Adaptation  
Explainable AI  
Data Science, Data Mining  
Healthcare Informatics:  
    Clinical Informatics  
    Bioinformatics  
    Neuro informatics  
    Social Informatics  
Healthcare Data Synthesis  
Implementation of Computation Models in Clinical Settings

## **PROFESSIONAL PREPARATION**

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| <b>PhD</b> | University of Texas at Dallas<br><b>Computer Science, Data Science</b><br>Dissertation: “Analyzing and Synthesizing Healthcare<br>Time Series Data for Decision-Support”<br>Committee: Balakrishnan Prabhakaran (chair),<br>Ovidiu Daescu, Sriraam Natarajan,<br>Vibhav Gogate                             | August 2019 |
| <b>MS</b>  | University of Texas at Dallas<br><b>Computer Science, Data Science</b><br>Advisor: Balakrishnan Prabhakaran  | August 2018 |
| <b>BS</b>  | Mount Holyoke College<br><b>Computer Science, Biology</b><br>Double Major<br>Graduated Summa Cum Laude<br>Thesis: “Using Rigidity Theory to Identify Hinge<br>Joints In Proteins”, <i>Best Senior Honors Thesis Project</i> ,<br>New England Undergraduate Computing Symposium<br>Advisor: Audrey St. John | May 2012    |

## **POSITIONS AND EMPLOYMENT**

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2019- **Assistant Professor**, Department of Computer Science, Oklahoma State University

## RESEARCH EXPERIENCE

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- 2014-2018** **Masters Student, Ph.D. Candidate**, The University of Texas at Dallas, TX, USA  
Research Focus: Machine Learning in Clinical Informatics
- 2012-2013** **Research Assistant**, Joint Ph.D. Program in Computational Biology, Carnegie Mellon-University of Pittsburgh, PA, USA  
Research Focus: Phylogenetics, Molecular Dynamics, Genomics, Biophysics
- Summer 2010, 2011** **Research Assistant**, Mount Holyoke College, MA, USA  
Research Focus: CAD Constraints to Kinematic Joints  
Funded by: SolidWorks
- 2009-2010** **Student**, Student, Mount Holyoke College, MA, USA  
Research Focus: Autonomous Robotic Wheelchair

## PUBLICATIONS

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### A.i. Published Manuscripts in Journals

1. (2021) Islam M, Shamsuddin R. Machine learning to promote health management through lifestyle changes for hypertension patients. Elsevier Array. 2021 August; 12.
2. (2021) Guttha N, Miao Z, Shamsuddin R. Towards the Development of a Substance Abuse Index (SEI) through Informatics. *Healthcare*. 2021; 9(11):1596. <https://doi.org/10.3390/healthcare9111596>
3. (2021) Shamsuddin R, Maweu BM, Dakshit S, Prabhakaran B. Generating Healthcare Time Series Data for Improving Diagnostic Accuracy of Deep Neural Networks. *IEEE Transactions on Instrumentation and Measurement*. 2021 May; 70:1-15. doi: 10.1109/TIM.2021.3077049.
4. (2021) Maweu BM, Dakshit S, Shamsuddin R, Prabhakaran B. CEFES: A CNN Explainable Framework for ECG Signals. *Artif Intell Med*. 2021 May; 115:102059. doi: 10.1016/j.artmed.2021.102059. 2021 Mar 26. PubMed PMID: 34001319.
5. (2017) Shamsuddin R, Prabhakaran B, Sawant A. Developing a Low Dimensional Patient Class Profile in Accordance to Their Respiration-Induced Tumor Motion. *Proceedings of the Very Large Database*. 2017 August; 10(12):1610-1621.
6. (2017) Balasubramanian A, Shamsuddin R, Prabhakaran B, Sawant A. Predictive modeling of respiratory tumor motion for real-time prediction of baseline shifts. *Phys Med Biol*. 2017 Mar 7;62(5):1791-1809. doi: 10.1088/1361-6560/aa58c3. 2017 Jan 11. PubMed PMID: 28075331; PubMed Central PMCID: PMC5702258.
7. (2014) Shamsuddin R, Doktorova M, Jaswal S, John AL, McMenimen K. Computational Prediction of Hinge Axes in Proteins. *BMC bioinformatics*. 2014 July; 15(8).

### A.ii. Published Manuscripts in Conferences

8. (2022) A. Gupta, J. Cecil, M. Pirela-Cruz, R. Shamsuddin, S. Kennison and C. Crick, "An Investigation on the Role of Affordance in the Design of Extended Reality based

- Environments for Surgical Training," *2022 IEEE International Systems Conference (SysCon)*, 2022, pp. 1-7, doi: 10.1109/SysCon53536.2022.9773802.
9. (2022) Cecil J, Gupta A, Kauffman S, Shamsuddin R, Krishnamurthy, Mayfield B, Jin Y, Conley B, Echeverri M, Hutson C, Newport C, Albert Z, Dinger C. The Design of a HCC Based Mixed Reality User Interface to Support Training of Astronauts for NASA's Moon Mission. [Internet]. AIAA SCITECH 2022 Forum, San Diego, CA & Virtual: AIAA 2022-0214; 2021 December. Available from: <https://doi.org/10.2514/6.2022-0214>.
  10. (2021) Ahmed F, Shamsuddin R. A Comparative Study of Credit Card Fraud Detection Using the Combination of Machine Learning Techniques with Data Imbalance Solution. 2021 2nd International Conference on Computing and Data Science (CDS). 2021 January.
  11. (2018) Shamsuddin R, Maweu B, Prabhakaran B. Virtual Patient Model: An Approach for Generating Synthetic Healthcare Time Series Data. IEEE International Conference on Healthcare Informatics. 2018 June.
  12. (2015) Shamsuddin R, Balasubramanian A, Sawant A, Prabhakaran B. Calculating Patient Similarity Based on Respiration Induced Tumor Motion. IEEE International Conference on Healthcare Informatics. 2015 October; :122-129.
  13. (2014) Balasubramanian A, Shamsuddin R, Cheung Y, Sawant A, Prabhakaran B. Exploring Baseline Shift Prediction in Respiration Induced Tumor Motion. IEEE International Conference on Healthcare Informatics. 2014; :155-160.

#### **A.iii. Manuscripts in Revision**

14. Strickler, E. A., Thomas, J., Thomas, J. P., Benjamin, B., & Shamsuddin, R. What do Black-box Machine Learning Prediction Models See?-An Application Study With Sepsis Detection. Submitted to Nature Scientific Reports. Impact Factor: 5.516. Tier 1 journal in multidisciplinary research. In revision since Dec, 2021. Accepted 2023.

#### **A.iv. Manuscripts in Work**

15. Ahmed F, Sultana T, Shamsuddin M, Shamsuddin R. Predicting Risk Tolerance Using Machine Learning. Aiming for a Tier 1 journal. Expected submission Nov 2022
16. Gottimukkula, PR, Shamsuddin R. Evolving KNN to Provide Feature Importance and Improved Interpretability in High Dimensions. Aiming for a Tier 1 journal/conference. Expected submission Dec 2022/Jan 2023.
17. Ishola P, Shamsuddin R. Exploring Feature Importance and Gender Bias During ML Prediction of Fluid Intelligence Score. Aiming for a Tier 2 journal. Expected submission Nov 2022
18. Sweet A, Shamsuddin R. Exploring Machine Learning Interpretability to Understand Social Features Affecting Covid19. Aiming for a Tier 2 conference. Expected submission Nov 2022
19. Ahmed F, Shamsuddin R. Using Synthetic Data to Improve Domain Adaptability of ECG Classification. Aiming for a Tier 2 conference. Expected submission Spring 2023
- 19\_1. A Study on Identification of Influential Genes Revealed Survival Impact of Glioblastoma Using Bioinformatics and Machine Learning Approaches

#### **A.v. Workshops, Presentations and Posters**

20. (2022) Charvat J, Shamsuddin R. Improving Multi-Set Classification Accuracy for Early Sepsis Detection, Undergraduate Summer Research Expo, Oklahoma State University, July 25, 2022.
21. (2022) Kiyma SS, Shamsuddin R. The Exploring Genetic Algorithm as an Image Synthesizer for Cases with Limited Training Samples, Undergraduate Summer Research Expo, Oklahoma State University, July 25, 2022.
22. (2021) Strickler E, Shamsuddin R. Multi-Set Machine Learning Algorithm for Disease Progression, Undergraduate Summer Research Expo, Oklahoma State University, July 27, 2021.
23. (2018) Shamsuddin R, Wang Y, Prabhakaran B. Exploring Functional Clinical Attributes For Macular Dystrophy Detection. International Workshop on Interactive and Spatial Computing. 2018 April.
24. (2015) R. Shamsuddin, "Prediction and Tracking Changes in Bio-medical Sensor Data," 2015 International Conference on Healthcare Informatics, Workshop, 2015, pp. 468-468, doi: 10.1109/ICHI.2015.76.
26. (2010) Shamsuddin R, St. John AL. The Joint Recognition Problem: from CAD constraints to Kinematic Joints. Poster, Fall Workshop on Computational Geometry. 2010; Stony Brook, NY, United States.
27. (2010) Drury A, Frechette M, Shamsuddin R, St. John AL, Barry D, Kennedy W. Autonomous Robotic Wheelchair. Poster and Presentation, Fall Workshop for New England Undergraduate Computing Symposium. 2010; Boston, MA, United States. Highest Social Impact Award.

## GRANTS

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### B.i. Applied Grants

|           | National Institutes of Health, NIH | National Science Foundation, NSF                               | External Others   | Internal   |
|-----------|------------------------------------|--|---|--|
| Fall 2019 | n/a                                | n/a  | n/a   | President's Fellows Priorities Fund, OSU Foundation        |
| Year 2020 |                                    | NSF CISE CRII<br>NSF RET (co-PI)<br>NSF REU (Senior Personnel) | Oklahoma Center for the Advancement of Science & Technology (OCAST), Health Application ( <u>not approved</u> )<br><br>Xilinx Women in Technology University Grant Program<br><br>Johnson and Johnson, WiSTEM2D | ARS, College of Art and Science, Oklahoma State University |
| Year 2021 | R21                                |  | Oklahoma Center for the Advancement of Science & Technology (OCAST),  | WOSU, OSU Women for Partnering (finalist)                  |

|                                 |  |                          |  |  |
|---------------------------------|--|--------------------------|--|--|
|                                 |  |                          | Health Application<br>( <u>approved but not funded</u> )<br><br>Johnson and Johnson,<br>WiSTEM2D   |  |
| <b>Year 2022</b>                | R01  | NSF SBE MMS              | Oklahoma Center for the<br>Advancement of Science<br>& Technology (OCAST),<br>Health Application<br><br>2022-23 Moore Inventors<br>Fellows | WOSU, OSU Women<br>for Partnering (finalist) |
| <b>Year 2023<br/>(expected)</b> | R21 (ECG,in<br>works)<br>R21 (2021<br>resubmission)<br>R01 (Data<br>Science, Nutrition,<br>Statistics; in<br>works, co-PI) | NSF CAREER<br>(in works) | OCAST (resubmission)<br><br>Moore Inventors<br>(resubmission)<br><br>Paycom  | WOSU   |

### **B.ii. Grants Funded**

Title: Computer Science Beginners' Course Package

Status: Current

Source of Support: College of Art and Science, Oklahoma State University

Primary Place of Performance: Oklahoma State University

Project/Proposal Start Date: 1/1/2020

Project/Proposal End Date: 12/31/2020

Total Award Amount: \$ 14, 639.5

Title: Improving Interpretability of Neural and Deep Networks

Status: Current

Source of Support: College of Art and Science, Oklahoma State University

Primary Place of Performance: Oklahoma State University

Project/Proposal Start Date: 07/1/2020

Project/Proposal End Date: 07/31/2021

Total Award Amount: \$ 12, 667

Title: RET Site: Research Experiences in Big Data and Machine/Deep Learning for Oklahoma STEM Teachers

Status: Pending, co-PI

Source of Support: National Science Foundation (NSF)

Primary Place of Performance: Oklahoma State University (Stillwater and Tulsa)

Project/Proposal Start Date: Summer 2021

Project/Proposal End Date: Summer 2024

Total Award Amount: \$ 394, 986

Title: REU Site: Big Data Analytics at Oklahoma State University

Status: Pending

Source of Support: National Science Foundation

Primary Place of Performance: Oklahoma State University  
Project/Proposal Start Date: 3/1/2021  
Project/Proposal End Date: 2/28, 2024  
Total Award Amount: \$ 405.000  
Person-Months Per Year Committed to the Project: Each Summer, 0.7500

## INVITED TALKS

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### 2022

- ML for Healthcare Innovations; Cowboy Innovations Technology Showcase, Tulsa, OK, USA
- Fun With Data Science; 2022 SAGE STEAM Camp Workshop, Southwestern OSU, OK, USA
- Importance of Data Science; Reform, Bangladesh Institute Of Governance And Management, Bangladesh
- Professor Mohammad Nasser Memorial Monthly Webinar, Statistical Learning Group, International

### 2021

- Machine Learning and Healthcare Informatics; Master Capstone Seminar, California State University, Fullerton, CA, USA
- Healthcare Informatics, Machine Learning, Data Science; Esteem-Builder Summer Academy, Oklahoma State Regents For Higher Education, Edmond, OK, USA
- Healthcare Informatics, Machine Learning, Data Science; Online Computer Forensics Summer Academy, NSF Summer Camp, University of Central Oklahoma, OK, USA
- Developing Systems for Post-Hoc Explanation of Deep Network; Baker-Hughes Colloquium, OK, USA

## TEACHING EXPERIENCE

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**University of Texas at Dallas, TX, USA**

Spring 2019

**Instructor**, Department of Computer Science

- *CS 2305.004 Discrete Mathematics for Computing I*, an undergraduate course averaging 45 students per semester, covering the following topics: Basic definitions and properties of logic, Logic equivalence, Use of quantifiers, Different proof strategies including proofs by induction, Algorithms, Big-O notation, algorithmic complexity, Basic counting techniques, Set theory and combinatorics, Properties of sets, relations, functions
- Developed quizzes, exams, and homework
- Revised the syllabus to meet accreditation standards
- Only instructor for the course; no TA

**Oklahoma State University, OK, USA**

Spring 2020-present

**Assistant Professor**, Department of Computer Science

- *CS 1013 Principles of Computer Science*, an undergraduate course averaging 30 students per semester, covering the following topics: Class, Objects, Class

inheritance, Data types, Variables, Parameters and Arguments, Getters and Setters, Comments, Looping using for loops, Variations in if/else statements, Arrays (if time permits) Sorting and notions of best/worst case scenarios

- Designed this project-based course from scratch using Alice3 and Java:
  - To prepare students with no programming backgrounds for CS I
  - To prepare students with limited mathematical backgrounds for programming
  - To reduce student dropout rates in CS I and CS II

The course is designed to ingrain in students the importance of problem solving in programming, familiarize them with the use of API to remain adaptable, and provide them with the basic programming tools and conventions. They are also introduced to a brief history of Computer Science through monthly challenges and solving cryptograms. Students also get experience with hands-on programming during class.

- Developed quizzes, projects, and homework
- Interactive programming session: Students are required to bring their laptops to class and code along. In-class problem solving and programming are also included.
- Revised the syllabus to meet accreditation standards
- Offered every Fall (since 2020) and was offered during Spring 2020
- Instruction mode: Face-to-face (including COVID times with university-recommended precautions) to keep incoming freshmen engaged, with options for viewing recorded lectures at a later time
  
- *CS 2133 Computer Science II*, an undergraduate course averaging 30 students per semester, covering the following topics: Objects, Classes, File I/O, Debugging, Testing, Arrays, Recursion, Inheritance, Polymorphism, Interfaces, GUI, View Controller, Exception Handling, Stream IO, Generics, Searching and Sorting, Analysis of Order of Growth, Linked List, Stacks, Queues, Heaps, Trees, Introduction to Dynamic Programming, Regular expression
  - Covered both Swing and JavaFX for GUI
- Developed quizzes, projects, and homework
- Revised the syllabus to meet accreditation standards
- Taught in Spring 2021
- Instruction mode: Face-to-face section during COVID
  
- *CS 4982 Computer Science Senior Capstone*, a nascent course proposed to meet ABET accreditation beginning Spring 2022. Currently an undergraduate elective, set to become a compulsory course by Fall 2024. This project-based, senior independent study is designed to include but is not limited to design, analysis, project management and execution, and testing of the assigned project. The experience is intended to emulate a real-world competitive business environment. The objectives of the course include:
  - To complete a group project that meets the objectives of a project sponsor or client.

- Students must demonstrate knowledge and skills developed in their undergraduate courses. Students will gain experience in the design of a specific system (defined by the client or clients) by applying knowledge and skills developed throughout their computer science curriculum.
- Independent learning of new material is also required to complete the class.
- Students will work as design teams, gaining experience in working in a team environment, and in preparing written and oral reports
- Build industry connections, find suitable projects, develop a proper rubric, document what worked and what did not work
- Taught in Spring 2022 and set to teach again in Spring 2023
- Instruction mode: Face-to-face
  
- *CS 4153, 5153 Mobile Application Development*, consists of two sections for undergraduate and one section for graduate students, and focuses on understanding the difference between traditional programming and mobile programming. Swift will be used for learning and creating apps for iOS devices, while Kotlin will be used for Android devices. The future plan for this course includes:
  - Currently, it is a completely online course. Eventually, have one face-to-face section.
  - OSU App Center holds an app design competition every Fall. The plan is to incorporate the implementation of the top two designs from this competition as projects for this course when offered the following Spring.
  - Have students from the course participate in Hackathon.
  
- *CS 3570, 5000, 5070, 6000 Computer Science*, undergraduate and graduate courses for independent study, Masters/PhD student.

#### **Doctoral Students Advised/Advising**

- Peace Ishola – Research area in *Computational Brain Analysis*, Title of thesis: To Be Announced, *Expected Graduation*: Fall 2025
- Geetha Karuppasamy – Research area in *Computational Features for Medical Images*, Spring 2022
- Gideon Adele - Research area in *Healthcare Data Synthesis*, Spring 2021, Fall 2021
- Abid Rasheed - Research area in *Posture Analysis for Predicting Relapse of Substance Abuse*, Spring 2020, Fall 2020 Spring 2021

#### **Doctoral Student Thesis Committee**

- Jai Hari Rajendran, OSU Office of Technology Commercialization, Chari: Dr. Dursun Delen, 2022-present
- Ali Sadeghi Milani, Computer Science, Chair: Dr. J. Cecil, 2022-present
- Surya Ayyalasomayajula, Department of Management Science and Information Systems, 2020-2021
- Avinash Gupta, Computer Science, Chair: Dr. J. Cecil, 2021

#### **Masters Students Advised: Master's Thesis**



- Pavan Reddy Gottimukkula – Research area in *Explainable ML*, Thesis Title: “Using the concept of nearest neighbors to develop an explainable model”, *Expected Graduation: Spring 2023*

#### **Masters Students Advised: Creative Components**

- Yuhan Jin, “Investigating challenges such as essence of instruction, attention span, and vertigo in AR/VR systems”, Independent Study, Spring 2022
- Nikhila Guttha, “Towards the Development of a Substance Abuse Index (SEI) through Informatics”, *Graduated Fall 2021 (1 journal paper)*
- Srikar Reddy Chenreddy, “Using Bayesian Algorithm to Identify Important Features for Heart Attack”, Spring 2021
- Karthik Vallabhaneni, “Review of Weak Supervision”, Spring 2021
- Nandhini Veluswamy (*co-advisee*), “Comparative Study on Early Sepsis Detection”, *Graduated Fall 2020*

#### **Undergraduate Students, Research Advisees:**

- Thomas Morton, “Substance Abuse” and “Improving ML Accuracy for Early Sepsis Detection”, Summer 2022-present
- Jacob Charvat, Summer 2022, (*1 poster*)
- Sumeyye Sena Kiyima, Summer 2022, (*1 poster*)
- Ethan Alexander Tyler Strickler, Summer 2021, (*1 poster, 1 paper pending in Nature Scientific Report*), Now a PhD student in Data Science at Oklahoma University
- Charles Lett, Summer 2021

#### **Undergraduate Students, Regular Advisees:**

- Janice Scott, Spring 2022, Fall 2022
- Ethen Melder, Spring 2022, Fall 2022
- Kameryn Fritz, Spring 2022, Fall 2022

#### **High School Teacher, Research Advisees:**

- Austin Sweet, Summer 2022, (*1 paper pending*)
- Grace Jaiyeola, Summer 2022, (applied for PhD program for Fall 2023)
- Melissa Snyder, Summer 2022

### **PROFESSIONAL TRAINING**

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#### **Workshop**

*2020 Career Mentoring Workshop, Computing Research Association (CRA), Washington Dc, February 2020*

The eleventh biennial Career Mentoring Workshop was held by the Computing Research Association on February 27 and 28, 2020 in Washington, DC. This workshop provides advice and mentoring activities for those starting an academic computing research career. Most attendees are in their first or second year as assistant professors. The workshop, consisting of a series of panels, is interspersed with opportunities to network with senior researchers and representatives from government agencies.

## **Workshop/Conference**

*Women in Data Science (WiDS) Conference, Stanford, March 2020*

The WiDS 2020 Conference at Stanford University featured keynotes, technical vision talks, an ethics panel, career panel, lunchtime breakouts, and multiple opportunities to network with other attendees.

## **Certifications (for NIH and healthcare-related grants)**

*Human Research - Data or Specimens Only Research*

CITI Program Certification

Under Requirements set by: Massachusetts Institute of Technology Affiliates

Renewed: April 2022, Expires: April 2025

Required for obtaining IRB approval.

*Human Research - Community Based Participatory Research Procedures*

CITI Program Certification

Under Requirements set by: Oklahoma State University

Issued: April 2022, Expires: April 2025

Required for obtaining IRB approval.

*Human Research- Internet/Online Research Methodology*

CITI Program Certification

Under Requirements set by: Oklahoma State University

Issued: April 2022, Expires: April 2025

Required for obtaining IRB approval.

*Human Research- Internet/Online Research Methodology*

CITI Program Certification

Under Requirements set by: Oklahoma State University

Issued: April 2022, Expires: April 2025

Required for obtaining IRB approval.

*Human Research- IRB Social, Behavioral, and Educational (SBE) Researchers*

CITI Program Certification

Under Requirements set by: Oklahoma State University

Issued: April 2025, Expires: April 2025

Required for obtaining IRB approval.

*Human Subjects- Research Involving HIPAA Privacy Protections*

CITI Program Certification

Under Requirements set by: Oklahoma State University

Issued: April 2022, Expires: April 2025

Required for obtaining IRB approval.

*HIPAA*

A HealthStream Company (HCCS)

Issued: 2022

Required for accessing Cerner Electronic Medical Record (EMR), which is owned by OSU Center of Health Systems Innovation (CHSI)

*HIPAA for Healthcare Professionals*

A HealthStream Company (HCCS)

Issued: 2022

Required for accessing Cerner Electronic Medical Record (EMR), which is owned by OSU Center of Health Systems Innovation (CHSI)

*HIPAA Compliance 01: Introduction*

A HealthStream Company (HCCS)

Issued: 2019

Required for accessing Cerner Electronic Medical Record (EMR), which is owned by OSU Center of Health Systems Innovation (CHSI)

*HIPAA Compliance 02: HIPAA Awareness*

A HealthStream Company (HCCS)

Issued: 2019

Required for accessing Cerner Electronic Medical Record (EMR), which is owned by OSU Center of Health Systems Innovation (CHSI)

*HIPAA Compliance 03: Privacy Rule Introduction*

A HealthStream Company (HCCS)

Issued: 2019

Required for accessing Cerner Electronic Medical Record (EMR), which is owned by OSU Center of Health Systems Innovation (CHSI)

*HIPAA Compliance 04: Protected Health Information*

A HealthStream Company (HCCS)

Issued: 2019

Required for accessing Cerner Electronic Medical Record (EMR), which is owned by OSU Center of Health Systems Innovation (CHSI)

*HIPAA Compliance 05: Patient Rights*

A HealthStream Company (HCCS)

Issued: 2019

Required for accessing Cerner Electronic Medical Record (EMR), which is owned by OSU Center of Health Systems Innovation (CHSI)

*HIPAA Compliance 06: Working with Business Associates*

A HealthStream Company (HCCS)

Issued: 2019

Required for accessing Cerner Electronic Medical Record (EMR), which is owned by OSU Center of Health Systems Innovation (CHSI)

*HIPAA Compliance 07: Law Enforcement Uses and Disclosures*

A HealthStream Company (HCCS)

Issued: 2019

Required for accessing Cerner Electronic Medical Record (EMR), which is owned by OSU Center of Health Systems Innovation (CHSI)

*HIPAA Compliance 08: Security Rule Introduction*

A HealthStream Company (HCCS)

Issued: 2019

Required for accessing Cerner Electronic Medical Record (EMR), which is owned by OSU Center of Health Systems Innovation (CHSI)

*HIPAA Compliance 09: Administrative, Physical and Technical Safeguards*

A HealthStream Company (HCCS)

Issued: 2019

Required for accessing Cerner Electronic Medical Record (EMR), which is owned by OSU Center of Health Systems Innovation (CHSI)

*HIPAA Compliance: Attestation*

A HealthStream Company (HCCS)

Issued: 2019

Required for accessing Cerner Electronic Medical Record (EMR), which is owned by OSU Center of Health Systems Innovation (CHSI)

*OSU-CHS HIPAA Review*

A HealthStream Company (HCCS)

Issued: 2019

Required for accessing Cerner Electronic Medical Record (EMR), which is owned by OSU Center of Health Systems Innovation (CHSI)

*General Safety- KnowledgeQ*

A HealthStream Company (HCCS)

Issued: 2019

Required for accessing Cerner Electronic Medical Record (EMR), which is owned by OSU Center of Health Systems Innovation (CHSI)

*2019 New Hire Compliance Training – G12*

A HealthStream Company (HCCS)

Issued: 2019

Required for accessing Cerner Electronic Medical Record (EMR), which is owned by OSU Center of Health Systems Innovation (CHSI)

**PROFESSIONAL SERVICE**

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- **International Level**

**Member of the Technical Program Committee (TPC)** 2021-  
ACM International Conference on Multimedia, ACM Southeast Conference

**Ad hoc Reviewer**

ACM Multimedia System  
Journal of the American Medical Informatics Association,  
Journal of Healthcare Informatics Research  
Journal of Biomedical Informatics and 4 more journals  
IEEE International Conference on Healthcare Informatics  
International Journal of Environmental Research and Public Health  
Healthcare  
Applied Sciences  
Mathematical and Computational Applications  
Electronics  
AI  
Big Data and Cognitive Computing

**Publicity Co-chair** 2015  
IEEE International Conference on Healthcare Informatics

- **National Level**

**Grace Hopper Scholarship Team**  
Reviewer, (4 applications reviewed) 2022

**Scientific Study Panel – NIH Study Section, Biodata Management and Analysis (BDMA)**  
Reviewer, (3 grants reviewed) 2022

**Grace Hopper Conference**  
Phase 2 Poster Session Judge, (3 applications reviewed) 2020

- **State Level**

**Women in Data Science, Stillwater** 2020-  
Ambassador, Co-Ambassador, Advisor

**Oklahoma State Science and Engineering Fair**  
Judge 2022

**Southwest Alliance for Girls' Enrichment in Science, Technology, Engineering, the Arts / Humanities, and Mathematics**  
Presenter, Mentor 2022

- **College Level**  
Proxy at Faculty Council meetings for CS department 2022
  
- **Departmental Level**
  - ACM-W**  
Chair, Organize 2019-  
Trying to revive this ACM chapter for graduate female students by organizing open houses every semester, by encouraging them to take leadership roles in Grace Hopper, WiDS, and other departmental activities. Outstanding Student Award Program is the incentive.
  
  - CS Outstanding Student Award**  
Initiator, Chair 2020-  
Recognize CS students for their excellence in research, education, and leadership. Prepare applications, select awardees, organize award ceremony.
  
  - Undergraduate Committee**  
Member 2022  
Aid undergraduate curriculum development and students with course selection.
  
  - Departmental Broadening Participation Committee**  
Member 2022  
Developing the BPC plan for the department. Visit high schools. Facilitate Girls Who Code with Stillwater High School.
  
  - Colloquium**  
Initiator, Chair 2019-Spring 2022  
Develop a platform for graduate students to talk and discuss about research and practice their presentation skills. Organize and schedule weekly talks. Find outside speakers.
  
  - Faculty Search Committee**  
Member 2019  
Shortlist faculty candidates, hold initial interview, help with campus interview.

## **OTHER**

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Developed and maintained the iLEAD lab website: <https://www.ileadlabrittikas.com>

Started and maintained the iLEAD Lab Twitter account: [https://twitter.com/r\\_shamsuddin](https://twitter.com/r_shamsuddin)

## **AWARDS AND HONORS**

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|-------------|---|
| 2022 - 2022 | Holistic Science Prize Faculty Award, OSU Mathematics Department  |
| 2020 - 2020 | Faculty Scholar Scholarship, Grace Hopper Celebration   |
| 2017 - 2017 | Computer Science Department Scholarship , University of Texas at Dallas   |
| 2013 - 2013 | ICCABS 2013 Student Travel Award, IEEE International Conference on Computational Advances in Bio and Medical Sciences |
| 2012 - 2012 | Annual Fund Scholarships, The Joyce Johnson Spencer '60 Annual Fund Scholarship                                       |
| 2012 - 2012 | Best Senior Honors Thesis , New England Undergraduate Computing Symposium   |
| 2012 - 2012 | Phi Beta Kappa, Sigma Xi, Sarah Williston Scholar, Mount Holyoke College  |
| 2010 - 2011 | C.V. Starr Scholar, Starr Foundation  |