

# Rifat Ara Tasnim

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Pocatello, Idaho, USA

## Education

<b>Idaho State University</b> <i>PhD in Computer Science</i>	Dec 2025 Pocatello, Idaho
<b>Khulna University of Engineering &amp; Technology (KUET)</b> <i>Bachelor of Science in Computer Science and Engineering</i>	Mar 2017 Khulna, Bangladesh

## Research interest

Human-Computer Interaction (HCI), Serious Games, Video Games, Virtual Reality (VR), Augmented Reality (AR), Mixed Reality (MR), and VR Simulation

## Technical Skills

C, C++, Java, Unity, Unity C#, Blender, Firebase, Meta Quest, HTC Vive, Apple Vision Pro, SenseGlove Nova

## Academic Experience

<b>Adjunct Faculty</b> <i>Idaho State University</i>	Jan 2026 – Present Pocatello, Idaho
<ul style="list-style-type: none"><li>Sole instructor; responsible for designing the curriculum, instructional materials, and assessments:<ul style="list-style-type: none"><li>* CS 4439/5539: Introduction to Computer Game Development</li></ul></li></ul>	
<b>Guest Lecturer</b> <i>Idaho State University</i>	Fall 2025 Pocatello, Idaho
<ul style="list-style-type: none"><li>CS 4441: Human Computer Interaction</li><li>CS 5542: Graphical User Interface Development</li></ul>	
<b>Graduate Teaching Assistant</b> <i>Idaho State University</i>	Aug 2022 – April 2025 Pocatello, Idaho
<ul style="list-style-type: none"><li>Graded assignments and exams of the following courses:<ul style="list-style-type: none"><li>* CS 6672: Research Methods in Human-Computer Interaction</li><li>* CS 6620: Empirical Software Engineering</li><li>* CS 4412 / 5512: Advanced Algorithms</li><li>* CS 3318: Secure Mobile Application Development</li><li>* CS 3305: Introduction to Computational Theory</li><li>* CS 2263: Advanced Object-Oriented Programming</li><li>* CS 2235: Data Structure &amp; Algorithm</li><li>* CS 1181: Computer Science and Programming I</li></ul></li></ul>	

## Research Experience

<b>Research Intern</b> <i>Idaho National Laboratory</i>	May 2025 – Nov 2025 Idaho Falls, Idaho
<ul style="list-style-type: none"><li>Conducted NSF-funded research in collaboration with the Chemistry Department of Idaho State University on interactive data visualization using Virtual Reality (VR), integrating haptic feedback using SenseGlove Nova to support accessibility for blind users (<b>Patent under preparation</b>)</li></ul>	
<b>VR Developer Intern</b> <i>Idaho National Laboratory</i>	Jan 2024 – Apr 2024 Idaho Falls, Idaho

- Designed and developed an immersive VR simulation of a nuclear reactor to support STEM education

### Graduate Research Assistant

Aug 2021 – Jul 2022

Idaho State University

Pocatello, Idaho

- Engaged in research on serious games using AR and VR technologies under the supervision of Dr. Farjana Z. Eishita
- Contributed to the conceptualization, prototyping, user testing, and statistical analysis

### Graduate Research Assistant

Aug 2019 – May 2021

University of New Orleans

New Orleans, Louisiana

- Conducted research on serious games for mental health applications under Dr. Farjana Z. Eishita
- Contributed to game design and development, study design, and data analysis

## Industry Experience

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### Software Engineer

Apr 2017 – Aug 2017

Celltron EMS

Dhaka, Bangladesh

- Developed and maintained desktop applications and Android software for the Government of Bangladesh

## Publications

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- **Tasnim, Rifat Ara**, and Farjana Z. Eishita. "Serious Game Mechanisms for Cognitive Distortion Assessment: Analyzing the Effects of Game Environment and Control." 10th International ICSE Workshop on Games and Software Engineering (GAS 2026). ACM, 2026. (To Appear)
- **Tasnim, Rifat Ara**, and Farjana Z. Eishita. "Adapting a Smartphone-Based Serious Game to Virtual Reality: Preliminary Outcomes and Effects on Player Experience." 5th International Conference on Intelligent Reality (ICIR 2026). IEEE, 2026. (Under Review)
- Khadka, Rajiv, **Rifat Ara Tasnim**, Hyrum Redd, and John Kalivas. "Multimodal Interaction Enhanced Immersive Analytics: Enabling Accessible Virtual Reality Data Analysis for Blind and Visually Impaired Users." Journal of Chemometrics, 2026 (Under Review)
- Hossan, Md Mosharaf, **Rifat Ara Tasnim**, and Farjana Z. Eishita. "Can You Keep Calm?: Adaptive Gameplay using Heart Rate as a Controller." 2025 IEEE 49th Annual Computers, Software, and Applications Conference (COMPSAC). IEEE, 2025.
- Hossan, Md Mosharaf, **Rifat Ara Tasnim**, and Farjana Z. Eishita. "Gamified Virtual Reality Exposure Therapy for Mysophobia: Evaluating the Efficacy of a Simulated Sneeze Intervention." 2025 Intermountain Engineering, Technology and Computing Conference (IETC). IEEE, 2025. **Best Paper Award**
- **Tasnim, Rifat Ara**, Farjana Z. Eishita, and Minhaz Zibran. "Data Guard: Android Application to Monitor Security Threat in Background Data Transmission." Software Engineering and Management: Theory and Applications. Springer, Cham, 2025. 67-78.
- **Tasnim, Rifat Ara**, Md Mosharaf Hossan, and Farjana Z. Eishita. "Analyzing Differential Impact of Text-Based Instructions in Video Games." 2024 Intermountain Engineering, Technology and Computing Conference (IETC). IEEE, 2024. **Best Paper Award**
- **Tasnim, R.**, Eishita, F., Armstrong, J., Ludema, E. Russel, J., The Disparate Impact of Distinct Background Music on Gameplay Experience: An Empirical Analysis, 21st International Conference on Information Technology: New Generations ((ITNG 2024). Springer International Publishing, 2024.
- Eishita, F. Z. , **R. A. Tasnim**, R. Pongratz, and D. Beard, "Gamified Digital Intervention to Ameliorate the Aptitude of Exposure Therapy for OCD." IEEE Gaming, Entertainment, and Media Conference (GEM), 2023.

- **Tasnim, Rifat Ara**, and Farjana Z. Eishita. "ARCoD: A Serious Gaming Approach to Measure Cognitive Distortions." 2022 IEEE 10th International Conference on Serious Games and Applications for Health (SeGAH). IEEE, 2022.
- **Tasnim, Rifat Ara**, and Farjana Eishita. "Arcod: An augmented reality serious game to identify cognitive distortion." 26th International Conference on Intelligent User Interfaces-Companion. 2021.
- **Tasnim, Rifat Ara**, and Eishita, Farjana Z., "Analyzing Differential Impact of CDS and ARCoD to Identify Cognitive Distortion", The 16th International Conference on Persuasive Technologies, Workshop on Designing Persuasive Technology to Support Mental Health, 2021.
- **Tasnim, Rifat Ara**, and Farjana Z. Eishita. "Analyzing the distinctive impact of personality traits on serious gameplay experience." 2021 IEEE 9th International Conference on Serious Games and Applications for Health (SeGAH). IEEE, 2021. **Best Paper Award**
- **Tasnim, Rifat Ara**, and Farjana Z. Eishita. "Mom an effort to comprising cbt in digital gaming." 2020 IEEE 8th International Conference on Serious Games and Applications for Health (SeGAH). IEEE, 2020.

## PhD Research Projects

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### **Militant of the Maze (MoM): A serious game to enhance the efficacy of treating patients with Obsessive Compulsive Disorder (OCD)**

- \* Designed and developed the game playable on smartphones, implementing the key features for the treatment procedure of OCD
- \* Conducted experiments on over 150 participants and performed the required statistical analysis
- \* Conducted an experiment to analyze the impact of player's personality traits on gameplay experience

### **MoMVR: A Virtual Reality Adaptation of Militant of the Maze (MoM)**

- \* Developed a complete VR version of the MoM game for the Meta Quest headset
- \* Conducted user studies with over 60 participants and performed statistical analysis to evaluate player experience and therapeutic effectiveness in VR settings

### **ARCoD: An Augmented Reality (AR) gaming platform to identify cognitive distortion**

- \* Designed and developed a smartphone-based AR game to investigate correlations between in-game decision-making and cognitive distortions
- \* Conducted experiments on over 100 participants and performed the required statistical analysis

### **3DCoD & 3DCoDB: A 3D Adaptation of ARCoD**

- \* Developed a 3D version of the ARCoD platform with two input modalities: button-based (3DCoDB) and gesture-based (3DCoD) interaction
- \* Conducted experiments on over 60 participants and performed the required statistical analysis
- \* Investigated the impact of environmental context on player responses and experience

### **Impact of Background Music on Gameplay Experience**

- \* Developed a 2D smartphone game featuring varied background music conditions
- \* Background music tracks were composed in collaboration with the Music Department at Idaho State University
- \* Conducted a user study with 40 participants and performed statistical analysis to evaluate changes in gameplay experience and performance across music conditions

### **Impact of Different Layout of Text-based Instructions on Game Performance**

- \* Developed a 2D smartphone game to evaluate the effect of varied text-based instruction layouts on player performance
- \* Analyzed the relationship between instructional design and task outcomes through gameplay metrics
- \* Conducted a user study with 40 participants and performed statistical analysis to assess layout-driven performance differences

## Professional Development and Training

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<b>NSF I-CREWS Hands-on Training in Applied AI and Machine Learning (HoT-AML)</b> <i>Center for Advanced Energy Studies (CAES)</i>	Fall 2024 <i>Idaho Falls, Idaho</i>
<ul style="list-style-type: none"> <li>* Gained foundational understanding of core AI/ML concepts and algorithms</li> <li>* Explored advanced topics such as physics-informed machine learning</li> </ul>	
<b>Thesis/Dissertation Writing Workshop – Selected Participant</b> <i>Idaho State University</i>	Summer 2024 <i>Pocatello, Idaho</i>
<ul style="list-style-type: none"> <li>* Gained guidance on structuring and writing academic manuscripts and dissertations</li> </ul>	
<b>Idaho Ignite Workshop – Selected Participant</b> <i>Boise State University</i>	Summer 2022 <i>Boise, Idaho</i>
<ul style="list-style-type: none"> <li>* A competitive workshop focused on innovation, entrepreneurship, and NSF I-Corps methodologies</li> <li>* Engaged in structured training to explore the commercial potential of research through customer discovery and lean startup strategies</li> </ul>	
<b>Training on Advanced JAVA</b> <i>Ministry of Posts, Telecommunications and Information Technology, Bangladesh Government</i>	2016 <i>Khulna, Bangladesh</i>
<ul style="list-style-type: none"> <li>* Completed training focused on advanced Java programming concepts and application development</li> </ul>	

## Synergistic Activities

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• <b>Judge</b> , Research & Creative Works Symposium, Idaho State University	2026
• <b>Reviewer</b> , Intermountain Engineering, Technology and Computing Conference (IETC)	2026
• <b>Judge</b> , Idaho Exhibition of Ideas	2026
• <b>Reviewer</b> , Elsevier journals	2026
• <b>Reviewer</b> , The 24th IEEE/ACIS International Conference on Software Engineering Research, Management and Applications (SERA 2026)	2026
• <b>Reviewer</b> , Journal of Chemometrics	2025
• <b>Secondary Reviewer</b> , IEEE Computer Society Signature Conference on Computers, Software, and Applications (COMPSAC)	2025
• <b>Secondary Reviewer</b> , IEEE Transactions on Human-Machine Systems	2024
• <b>Secondary Reviewer</b> , ACM International Conference on Mobile Human-Computer Interaction (MobileHCI)	2024
• <b>Student Volunteer</b> , NASA Idaho Space Grant Consortium High School Summer Program	2023
• <b>Secondary Reviewer</b> , IEEE Computer Society Signature Conference on Computers, Software, and Applications (COMPSAC)	2023

- **Web Co-chair**, ACM International Conference on Mobile Human-Computer Interaction (MobileHCI) 2022
- **Session Facilitator**, 26th Annual Conference on Intelligent User Interfaces (IUI) 2021
- **Student Volunteer**, 32nd ACM User Interface Software and Technology Symposium (UIST) 2019
- **Student Volunteer**, National High School Programming Contest, Bangladesh 2015-2016

## Institutional Service

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- **Member**, Faculty Promotion Committee for Full Professor, Department of Computer Science, Idaho State University 2024

## Community Services

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- **Secretary**, Bangladesh Student Association, Idaho State University Aug 2022 – Jul 2023
- **Secretary**, Bangladesh Student Association, University of New Orleans Aug 2020 – May 2021
- **Treasurer**, Bangladesh Student Association, University of New Orleans Aug 2019 – Jul 2020
- **Assistant General Secretary**, Dream (Voluntary Blood Donation Society), KUET 2016
- **Student Volunteer**, Dream (Voluntary Blood Donation Society), KUET 2013 - 2015

## Awards

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- **Outstanding Student Achievement Award: Doctoral Candidate**, Idaho State University 2026
- **Summer Research Grant**, Graduate School, Idaho State University 2025
- **Conference Travel Grant**, Graduate School, Idaho State University 2025
- **Dean's Excellence Fund Award**, Summer Tuition Assistance, Idaho State University 2025
- **Best Paper Award**, i-ETC 2025  
"Gamified Virtual Reality Exposure Therapy for Mysophobia: Evaluating the Efficacy of a Simulated Sneeze Intervention." - Second Author
- **Best Paper Award**, i-ETC 2024  
"Analyzing Differential Impact of Text-Based Instructions in Video Games." - First Author
- **Top Poster Presentation Award**, 9th Annual Graduate Research Symposium, Idaho State University 2023
- **Conference Travel Grant**, Graduate School, Idaho State University 2023
- **Dean's Excellence Fund Award**, Conference Travel Support, Idaho State University 2023
- **Top Poster Presentation Award**, 8th Annual Graduate Research Symposium, Idaho State University 2022

- **Best Paper Award**, IEEE SeGAH, 2021  
“Analyzing the distinctive impact of personality traits on serious gameplay experience.”  
- First Author
- **Dean’s List**, Khulna University of Engineering & Technology, Bangladesh Session 2014-2015
- **Merit-Based Academic Scholarship**, Khulna University of Engineering & Technology, Bangladesh 2013-2017
- **1st Place (Individual), 2nd Place (Team)**, Intra-Department Programming Contests, Khulna University of Engineering & Technology, Bangladesh 2014