

# Md Mosharaf Hossan

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Pocatello, Idaho - 83201, United States

## RESEARCH INTERESTS

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Software Engineering, Human-Computer Interaction, Computer Vision, Machine Learning

## EDUCATION

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- **Idaho State University** August, 2023 - May, 2025  
MS in Computer Science Idaho, United States
  - GPA: 3.95/4.00
- **Khulna University of Engineering & Technology** December, 2013x - February, 2018  
B.Sc. in Computer Science & Engineering Khulna, Bangladesh
  - GPA: 3.06/4.00

## PEER REVIEWED PUBLICATIONS

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- [C.1] [MSR, 25] Costain Nachuma, **Md Mosharaf Hossan**, Asif Kamal Turzo, Minhaz F. Zibran (2025). **Decoding Dependency Risks: A Quantitative Study of Vulnerabilities in the Maven Ecosystem**. Manuscript accepted for publication in *22nd international conference on mining software repositories (MSR)*.
- [C.2] [IoTaIS, 24] **Md Mosharaf Hossan**, Mostafa M. Fouda, Farjana Z. Eishita (2024). **Adaptive Game Design Using Machine Learning Techniques: A Survey**. In *The 2024 IEEE International Conference on Internet of Things and Intelligence System (IoTaIS)*, pages 144-150, IEEE, 2024, Location. DOI: 10.1109/IoTaIS64014.2024.10799330
- [C.3] [IETC, 24] Rifat Ara Tasnim, **Md Mosharaf Hossan**, Farjana Z. Eishita (2024). **Analyzing Differential Impact of Text-Based Instructions in Video Games**. In *2024 Intermountain Engineering, Technology and Computing (IETC)*, pages 227-232, IEEE, 2024, Location. DOI: 10.1109/IETC61393.2024.10564249
- [C.4] **Md Mosharaf Hossan**, Rifat Ara Tasnim, Farjana Z. Eishita (2025). **Gamified Virtual Reality Exposure Therapy for Mysophobia: Evaluating the Efficacy of a Simulated Sneeze Intervention**. Accepted for publication in *In 2025 Intermountain Engineering, Technology and Computing (IETC)*.
- [C.5] Aney Rani Paul, **Md Mosharaf Hossan**, Farjana Z. Eishita (2025). **Analyzing the User Experience of Google Drive Storage Management with Alert Notification**. Accepted for publication in *In 2025 Intermountain Engineering, Technology and Computing (IETC)*.
- [C.6] **Md Mosharaf Hossan**, Rifat Ara Tasnim, Farjana Z. Eishita (2025). **Can You Keep Calm?: Adaptive Gameplay using Heart Rate as a Controller**. (Under Review)

## PROFESSIONAL EXPERIENCE

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- **Idaho State University**

Graduate Teaching Assistant

August 2023 - May 2025

Pocatello, United States

- CS3321 Introduction to Software Engineering, Spring, 25. **Used Skills:** Python
- CS4412/5512 Advanced Algorithms, Fall, 24. **Used Skills:** C++
- CS4412/5512 Advanced Algorithms, Spring, 24. **Used Skills:** Python
- CS1181 Computer Science and Programming, Fall, 23. **Used Skills:** C++
- Delivered lectures and held office hours to guide students in problem-solving.
- Graded homework, assignments, and projects and provided feedback.
- Developed a biofeedback adaptive VR game to help people with mysophobia manage their symptoms. **Used Skills:** Unity, C#, Kotlin, Laravel, MySQL

- **Sigma Solutions**

Senior Software Engineer

January 2021 - Present

Ontario, Canada

- Led a team of 5 developers in design and development of several Service Operation Center automation tools for South East Asia's telecom companies which automates BTS tower management e.g. real-time status, automatic fault detection, and reporting. It reduced manual effort of service operation team by nearly **30%**. **Used Skills:** Python, Laravel, Vue.js, MySQL, Redis
- Developed task and ticket management modules for **Smartcomm**, a SaaS-based multi-tenant omnichannel customer query management system featuring an integrated Asterisk-based call center solution. **Used Skills:** Laravel, Vue.js, PostgreSQL
- Spearheaded a team of three developers to automate UI-based user management across 20 Ericsson, Nokia, and Huawei telecom node management websites, utilizing the WebDriver protocol for streamlined browser automation. **Used Skills:** Laravel, Vue.js, MySQL

- **Sigma Solutions**

Software Engineer

March 2019 - December 2020

Ontario, Canada

- Designed and Developed a inventory system to scrap and store telecom node data from remote resources periodically. **Used Skills:** PHP, MySQL
- Developed RopeAccess, a customized internal operations management system with CRM and task management modules. Conducted requirement analysis, task distribution, functional implementation. **Used Skills:** Vue.js, Laravel, MySQL
- Developed RESTful apis, restructured frontend modules, designed UI, and integrated payment gateway for Pixmama- a stock photo marketplace with over 80K photos. **Used Skills:** Angular, Laravel, Express.js, MySQL, Elasticsearch, Redis

- **Hyper Systems Ltd.**

Software Engineer

May 2018 - February 2021

Dhaka, Bangladesh

- Built RESTful APIs for **myRADAR**, a GPS-based vehicle tracking system with 2k daily active devices generating around 1M data each day. Improved refuel detection efficiency by **50%**. **Used Skills:** Laravel, Vue.js, MongoDB

## PROJECTS

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- **Proteineizer** : A visualizer of DNA and Protein sequence to help physicians find the hot spot by comparing the sequence of a cancer patient with a healthy person through stacked visualization. **Used Skills:** D3.js, Vanilla js
- **Fleet Searcher** : An asynchronous keyword based google scrapper which scraps and stores relevant information while keeping search query throttling in mind **Used Skills:** Laravel, Vue.js, MySQL

## SKILLS

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- **Programming Languages:** Python, PHP, JavaScript, C/C++, C#, SQL, HTML/CSS,  $\text{\LaTeX}$
- **Frameworks:** Laravel, PHPUnit, Vue.js, Angular, Nuxt.js, D3.js, Tailwind CSS
- **Database Systems:** MySQL, PostgreSQL, MongoDB, Neo4j
- **Cloud Technologies:** AWS
- **DevOps & Version Control:** Docker, Docker Swarm, Git
- **Other Tools & Technologies:** Unity, Redis, Elasticsearch, TDD, CI/CD

## CONFERENCE REVIEWER

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- COMPSAC 2025: IEEE International Conference on Computers, Software, and Applications
- GEM 2024: IEEE Gaming, Entertainment, and Media Conference
- COMPSAC 2024: IEEE International Conference on Computers, Software, and Applications
- MobileHCI 2024: 26th International Conference on Mobile Human-Computer Interaction

## LEADERSHIP EXPERIENCE

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- **Treasurer** *August 2024 - Present*  
*ISU Tennis Club*
  - Collect membership dues and manage clubs finances
- **Vice President** *August 2016 - July 2017*  
*Bit to Byte, Software Development Club at Khulna University of Engineering & Technology*
  - Organize workshops on Software Development
  - Mentor students on their academic Software development projects

## VOLUNTEERING EXPERIENCE

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- Mentor, National High School Programming Contest (NHSPC) (2016, 2017) Khulna.
- Mentor, SGIPC (Special group interested in programming contests). (2015, 2016)

## REFERENCES

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1. **Dr. Farjana Z Eishita**  
Assistant Professor, Department of Computer Science  
Idaho State University  
Email: farjanaeishita@isu.edu
2. **Dr. Minhaz Zibran**  
Associate Professor, Department of Computer Science  
Idaho State University  
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3. **Dr. Mostafa Fouda**  
Associate Professor, Department of Computer Science  
Idaho State University  
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