

# BARSHA ROY

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## EDUCATION

**B.Sc. in Computer Science & Engineering**  
Rajshahi University of Engineering & Technology (RUET)

Awarded: September 2023  
**CGPA-3.44/4.00**

## RESEARCH INTEREST

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| <ul style="list-style-type: none"><li>• Computer Vision</li><li>• HPC</li><li>• Computer Architecture</li></ul> | <ul style="list-style-type: none"><li>• Cyber-Physical Systems</li><li>• Cybersecurity</li><li>• Scalable AI</li></ul> |
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## RESEARCH EXPERIENCE

1. Tahsen Islam Sajon, **Barsha Roy** et al. "*Attention Mechanism-enhanced Deep CNN Architecture for Precise Multi-Class Leukemia Classification*". 2nd International Conference on Big Data, IoT and Machine Learning (BIM, 2023). Lecture Notes in Networks and Systems, vol 867. Springer, Singapore.  
DOI: [10.1007/978-981-99-8937-9\\_24](https://doi.org/10.1007/978-981-99-8937-9_24)
2. Md Nazmul Islam, **Barsha Roy** et al. "*Spatial Attention-guided Deep Learning for Accurate Kidney Disease Classification in CT Scans*". 26th International Conference on Computer and Information Technology (ICCIT). IEEE. 2023. DOI: [10.1109/ICCIT60459.2023.10441347](https://doi.org/10.1109/ICCIT60459.2023.10441347)
3. **Barsha Roy**, Md Farukuzzaman Faruk et al. "*A Cutting-Edge Ensemble of Vision Transformer and ResNet101v2 Based Transfer Learning for the Precise Classification of Leukemia Sub-types from Peripheral Blood Smear Images*". 6th International Conference on Electrical Engineering and Information and Communication Technology (ICEEICT). IEEE. 2024. DOI: [10.1109/ICEEICT62016.2024.10534388](https://doi.org/10.1109/ICEEICT62016.2024.10534388)

## WORK EXPERIENCE

<b>University of Information Technology and Sciences (UITS)</b> <i>Lecturer - Department of CSE</i>	Jan 2024 - Present <i>Dhaka, Bangladesh</i>
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- Courses Taken: Computer Architecture, Digital Logic Design, Internet Programming, Assembly Language Programming, Scientific Research Methodology, Client Server Programming, Distributed System and Cloud Computing, Information System Design, Network Security, Software Engineering
- Administrative Duty: OBE Trainee, Advisor, Course Outline Preparation, Thesis Supervisor

<b>University of Scholars (IUS)</b> <i>Lecturer - Department of CSE</i>	Nov 2023 - Jan 2024 <i>Dhaka, Bangladesh</i>
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- Courses Taken: Structured Programming Language, Computer Fundamentals, Competitive Programming
- Administrative Duty: Advisor, Course Outline Preparation

<b>Qubitech Solutions</b> <i>Web Developer</i>	Mar 2022 - Sep 2022 <i>Rajshahi, Bangladesh</i>
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- Contributed to developing a dynamic web application using React.js
- Designed and implemented key modules, including a functional menu and "Add to Cart" features
- Collaborated with team members to ensure seamless integration and optimal performance
- Assisted in debugging and troubleshooting issues to ensure application stability
- Participated in code reviews to maintain high-quality standards

<b>Code Studio</b> <i>UI/UX Intern</i>	Apr 2021 - Jun 2021 <i>Rajshahi, Bangladesh</i>
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- Assisted in designing user interfaces using Figma and Adobe XD
- Worked with team members to align designs with project goals
- Conducted design reviews and provided feedback
- Assisted in the creation of wireframes and prototypes for new features

## PROJECTS

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### **E-Bookopolis | Django, HTML, CSS, Bootstrap, JavaScript [GitHub Link]**

- Created a user-friendly e-commerce website for a book store with Django, HTML, CSS, Bootstrap, and JavaScript
- The site provides an enjoyable shopping experience, showcasing highlighted books, categories, and a functional cart system
- Users can create accounts, manage information, and view order history

### **Blood Donation App | Java [GitHub Link]**

- Developed a Blood Donation App integrating Firebase, Google Maps API and Firebase Messaging Services
- The app allows users to register, log in and request blood donations. The users can toggle their blood request status and receive notifications from nearby registered donors
- Implemented a donor acceptance feature and integrated user profiles with contact information and location services

### **3-bit CPU Design | Multisim [GitHub Link]**

- Developed a 3-bit CPU with a 16-bit word size, requiring 16-bit SRAM, supporting arithmetic and logic instructions in Register, Immediate, and Branching modes including SHL and SHR operations
- Designed a 3-bit ALU, register set, counter register, and PC adder
- Implemented a 16-bit ISA with a 3-bit opcode and 13-bit operand

## TECHNICAL SKILLS

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- **Programming Languages:** Python, C, C++, Java, JavaScript, SQL, MATLAB, Verilog
- **Libraries/Frameworks/APIs:** Django, React.js, Pandas, Numpy, Matplotlib, Scikit-learn, PyTorch, Transformers, TensorFlow, Keras
- **Tools for Web Development:** HTML5, CSS3, Bootstrap, REST APIs, JSON, XML
- **Database Systems:** MySQL, Firebase
- **Version Control:** Git, GitHub
- **Microsoft Office Packages:** MS Word, MS PowerPoint, MS Excel, MS Outlook

## AWARDS AND ACHIEVEMENTS

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- First Runner Up of National Debate Competition - 2015
- Campus Finalist of Hult Prize - 2018

## CLUBS AND ASSOCIATIONS

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- Executive member and former debater of RUET Debating Club
- Executive member of RUET Career Forum
- Executive member and former performer of RUET Cultural Club 'Onuronon'

## REFERENCES

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### **Md. Farukuzzaman Faruk**

Assistant Professor, Department of Computer Science & Engineering, RUET, Bangladesh

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### **Md. Azmain Yakin Srizon**

Assistant Professor, Department of Computer Science & Engineering, RUET, Bangladesh

Email: [azmainsrizon@cse.ruet.ac.bd](mailto:azmainsrizon@cse.ruet.ac.bd)