

# MD Jubair Ahmed Sourov

Dhaka, Bangladesh

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## RESEARCH INTERESTS

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Machine Learning, Sensors and Robotics, Multi Agent Systems, Computer Vision.

## EDUCATION

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**BSc in Robotics and Mechatronics Engineering**

CGPA 3.69/4.00

CGPA of last 2 years : 3.77

**University of Dhaka, Dhaka Bangladesh**

2016-2020

## RESEARCH EXPERIENCE

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**Independent University Bangladesh**

*Research Associate, Center for Computational and Data Sciences*

**Dhaka, Bangladesh**

*July 2022 - present*

### Ongoing Projects:

**textbfStroke Rehabilitation System:** Developing a rehabilitation aid system that allows the doctor to record exercises and compare exercises done by patients by motion capture devices (Microsoft Kinect and IMU device).

**Particle tracking and Visualization (CERN):** Develop a 3D environment in Blender to visualize particle tracking data from ALICE detector of CERN.

**Air Quality Monitoring System:** Developed and deployed real time air particle monitoring devices to collect local air data (particles, temperature etc.) to assess the air quality.

## KEY SKILLS

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<b>Programming Language</b>	Python, C, C++, MATLAB
<b>Research Tool</b>	PyTorch, Tensorflow, LaTeX
<b>Simulation</b>	SolidWorks
<b>Embedded System</b>	Raspberry Pi, PLC, MCU
<b>Machine Operation</b>	3D printing, CNC machining

## RESEARCH PUBLICATIONS

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- **Classifying Eye-Tracking Data using Saliency Maps;** Shafin Rahman; Sejuti Rahman; Omar Shahid; Md. Tahmeed Abdullah; Jubair Ahmed Sourov. (2021, January). Classifying Eye-Tracking Data Using Saliency Maps. In 2020 25th International Conference on Pattern Recognition (ICPR) (pp. 9288-9295). IEEE.  
<https://ieeexplore.ieee.org/abstract/document/9412308>
- **Simulation of Pattern Formation of Swarm with Minimum Shape Parameters,** Md. Tahmeed Abdullah; Md. Jubair Ahmed Sourov; Sejuti Rahman; Sujan Sarker; Joint 9th International Conference on Informatics, Electronics & Vision (ICIEV) and 2020 4th International Conference on Imaging, Vision & Pattern Recognition (icIVPR). IEEE, 2020.  
<https://ieeexplore.ieee.org/abstract/document/9306556>

## RESEARCH PROJECTS

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**[Funded]"Developing an automated screening method of autistic children utilizing their visual attention."**

- Develop a novel method to classify autistic children from typically developed children using eye-tracking data
- Collected data from the Institute of Paediatric Neuro disorder and Autism, BSMMU
- Analyzed data and develop a Machine Learning model to accurately classify healthy and children with autism
- Funded from Innovation Grant by the Ministry of ICT, Peoples Republic of Bangladesh

**[Funded]"Rexplorer: Swarm robot based rescue operation and exploration "**

- Multi agent system of independent robots for collaborative locomotion and exploration.
- Robots driven by microcontroller were coordinated by a central controller.
- Undergraduate final project to develop autonomous flock of swarm robots for exploration.

**[Commercial]"Autonomous Air conditioner control system "**

- Developed an intelligent system to monitor room and detect human presence.
- When no human is present, it turns off the air condition by wireless method

## SELECTED ACADEMIC PROJECTS

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**Hand Gesture Recognition System**

*Jan 2019-April 2019*

- Collected had gesture data by flex sensors
- Developed a machine learning model for automated detection hand gesture recognition and American Sign Language recognition

## STANDARDIZED TEST SCORES

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**IELTS** : overall : 7; Speaking : 7, Listening : 7.5, Writing : 6.5, Reading : 7

**GRE** : Total : 311; Quantitative: 159, Verbal: 152, AWA : 3.0

## VOLUNTARY ACTIVITIES

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- Mentor & Organizer, Bangladesh Robot Olympiad (2018-2019).
  - Conducted robotics boot camps and prepared for International Robot Olympiad
  - Organized the national event of Bangladesh Robot Olympiad
- Founding Director, Manager and Content Creator, [www.musophia.com](http://www.musophia.com) (2017-Present).
  - The ultimate platform dedicated to music in Bengali language
- Robotics Instructor, Mindcraft Labs.

## CERTIFICATION COURSES

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- Introduction to TensorFlow for Artificial Intelligence, Machine Learning, and Deep Learning
- Natural Language Processing with Classification and Vector Spaces
- Convolutional Neural Networks in TensorFlow
- Convolutional Neural Networks
- How Google does Machine Learning
- Neural Networks and Deep Learning
- Structuring Machine Learning Projects
- Natural Language Processing with Classification and Vector Spaces

- Sequence Models

## REFERENCES

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- **Dr. Sejuti Rahman**  
Postdoc(Carnegie Mellon University, USA)  
Postdoc (University of Technology Sydney, Australia)  
Ph.D. (Australian National University)  
Assistant Professor  
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