# POLOK PODDAR

**STUDENT**

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in iam-proloy  ⭘ proloypoddar

🌐 For more, visit my portfolio: iamproloy.vercel.app

## EXPERIENCE

### Funder and CEO
**dotPY Academy**

📅 July 2024 – Ongoing  📍 Dhaka,Bangladesh

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### Assistant Director
**ROBOTICS CLUB OF BRAC UNIVERSITY**

📅 March 2024 – Ongoing  📍 Dhaka,Bangladesh

- Research and Project Management Department

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### Instructor
**STEMON Bangladesh**

📅 August 2023 – Ongoing  📍 Dhaka,Bangladesh

- Programming instructor
- Robotics Coordinator

## PROJECTS

### OVIJAN V2 – National Champion Rescue Robot

- Designed an advanced rescue robot capable of navigating hazardous environments and detecting obstacles using multiple sensors.
- Won the **National Championship** and **secured 6th place globally** at the Technoxian World Robotics Championship.
- Integrated GPS and AI-driven decision-making for real-time data collection and mapping.

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### OVIJAN miniV1 – Rescue and Environmental Data Collection Robot

- Built a compact version of the robot for environmental data collection, equipped with various sensors.
- Designed for real-time air quality monitoring, thermal imaging, and obstacle detection.

## MY LIFE PHILOSOPHY

*Imagination is more important than innovation.*

## MOST PROUD OF

**AI Internship Selection**
Selected for a 4-week virtual Artificial Intelligence internship at CodSoft, focusing on hands-on skill development and real-world project experience.

**National Champion**
Ovijan Version 2, has emerged as the champion in the innovation challenge segment at the 1st Technoxian Bangladesh National Round 2024!

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**Supervised Machine Learning**
Completed from DeepLearning.AI, learning about supervised learning techniques.

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**Programming for Everybody**
Completed from the University of Michigan via Coursera, learning the basics of programming with Python.

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**Python 3 for Robotics**
Learned Python programming specific to robotics applications.

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**Linux for Robotics**
Gained knowledge of using Linux in the context of robotics.

## STRENGTHS

Hard-working  Critical thinking

Motivator & Leader

Leadership in Research and Productivity

- Controlled via microcontrollers with wireless data transmission for remote monitoring.

## Autonomous Vehicle with GenAI and RL

- Developed a self-learning autonomous vehicle using Reinforcement Learning (RL) and Generative AI (GenAI) for real-time navigation.
- Implemented computer vision-based lane detection and obstacle avoidance for efficient path-following.
- Trained the model in a simulation environment and tested its learning behavior.

## AI-Driven Agricultural Tool for Crop Health and Weather Forecasting

- Developed an AI-powered system for real-time crop health monitoring and weather forecasting.
- Implemented LSTM for weather prediction and ML-based pest identification.
- Used Reinforcement Learning to improve prediction accuracy over time.
- Integrated geo-tagging for tracking abnormal crop conditions and optimizing agricultural decisions.

## Boxing Robot – Inspired by Real Steel

- Designed a servo-powered boxing robot capable of mimicking human punches and defensive moves.
- Developed a motion control system for fluid and responsive robot movements.
- Implemented real-time video synchronization for performance analysis and training.

## Mongol Barta – Health Management System

- Created a health management system to track and analyze patient health records efficiently.
- Designed a user-friendly interface for doctors and patients, enabling easy access to medical history.
- Implemented data analytics for predicting health trends based on recorded symptoms.

## BanglaVoice Assistant – Bengali Voice-Controlled AI Assistant

- Developed a Bengali-language voice assistant for real-time speech recognition and automation.
- Integrated AI-powered NLP to understand and execute voice commands in Bengali.
- Designed to control IoT devices and provide interactive responses to user queries.

# RESEARCH PROJECTS

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C++  Embedded Systems  Statistical Analysis
Machine Learning  Python  Robotics
Linux  Data Science  PHP  Program Creation
Computer Vision  PyTorch  TensorFlow
CUDA  MySQL  AI  ML  HTML
Reinforcement Learning (RL)

**LinkedIn**
Polok Poddar on LinkedIn

**GitHub**
Proloypoddar on GitHub

# LANGUAGES

**Bangla** ● ● ● ● ●

**English** ● ● ● ● ●

**Hindi** ● ● ● ○ ○

# INTERNSHIPS

### Artificial Intelligence Intern
**CodSoft**

📅 April 2025          📍 India

- Selected for a 4-week internship focused on Artificial Intelligence and real-world project development.
- Gained hands-on experience with machine learning tools and concepts through structured tasks.
- Completed coding assignments, participated in virtual collaboration, and submitted weekly reports.

# EDUCATION

### B.Sc in Computer Science and Engineering
**BRAC University**

📅 May 2021 – Current

Thesis title: Enhancing Crop Production through a Novel Agricultural Tool Incorporating Real-Time Weather and Crop Health Diagnostics.

### HSC in Science
**Govt Yasin College**

📅 April 2018 – April 2020

### SSC in Your Science
**Angaria High School**

📅 January 2016 – February 2018

## Vision Guard: AI-Powered Indoor Navigation System for the Visually Impaired

- Developed a complete **indoor navigation system** with door and obstacle detection using a **custom YOLOv8 model**.
- Designed a novel **distance measurement algorithm using monocular vision** to estimate safe walking distance.
- Implemented intelligent features like **safe door detection**, **exit path guidance**, and **pathfinding assistance**.
- Integrated **voice assistant support** for command input and real-time feedback.

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## 2D Mapping using Sonar Sensors

- Developing a **2D mapping system** using three **HC-SR04 ultrasonic sensors**.
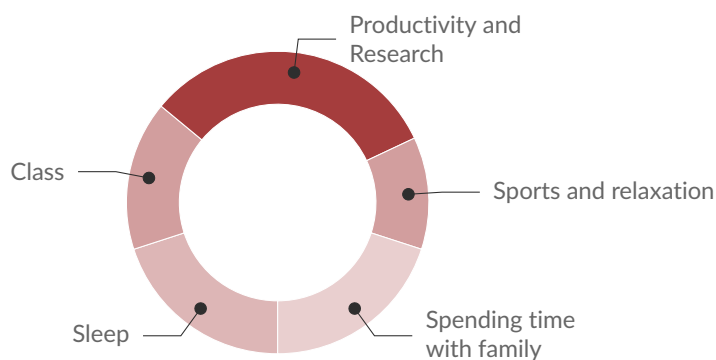- Aims to generate an **accurate spatial representation** of the surroundings in real-time.

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## RCControl Library – Simplified RC Car & Motor Control for Arduino

- Created a **new Arduino library** to streamline the control of **RC cars and DC motors**.
- Simplifies motor control logic, making it easier for **robotics and automation projects**.
- Enables users to focus on building without worrying about low-level motor control details.

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## Thermal Image Processing Algorithm using AMG8833

- Developed a **custom algorithm** to visualize **thermal data** captured from the **AMG8833 thermal camera**.
- Utilized **serial communication and Python** to create a real-time heat map representation.
- Aims to improve **temperature-based anomaly detection** in robotics and automation.

# A DAY OF MY LIFE



Productivity and Research

Class

Sports and relaxation

Sleep

Spending time with family

# PUBLICATIONS

## 📄 Articles

- **P. Poddar**, "The dream of a creative boy," *Personal Insight*, Oct. 2022, Written By Polok Poddar.

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## 👥 Conference Proceedings

- **P. Poddar**, "Model selection and comparison for weather prediction," in *Model Selection and Comparison for Weather Prediction*, Dhaka, Bangladesh, Jan. 2025.

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