

# Aniruddha Rakshit

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## EDUCATION

### State University of New York (SUNY) Binghamton

Ph.D. Candidate in Computer Science, Advisor: Jayson Boubin

Binghamton, NY

August, 2022–August, 2027 (expected)

### Jahangirnagar University

M.S. in Computer Science and Engineering

Dhaka, Bangladesh

April 2015–February 2017

### Jahangirnagar University

B.S. in Computer Science and Engineering

Dhaka, Bangladesh

2010–2014

## SKILLS

- **Programming Languages:** Python, C++, C
- **Machine Learning Libraries:** PyTorch, Tensorflow, Keras, Scikit-Learn, Pandas, Matplotlib
- **Simulation and Design Tools:** PyBullet, MATLAB, ROS
- **System Design Skill:** Docker, Kubernetes, Load Balancer
- **Embedded Device:** Raspberry Pi, NVIDIA Jetson Nano and Xavier, ESP32

## PUBLICATIONS

- [1] S. Das, J. Cheng, **Aniruddha Rakshit**, J. Boubin, and R. Ramnath, “Epic: Efficient pruning for inference on constrained devices”, in *Practice and Experience in Advanced Research Computing 2025: The Power of Collaboration*, ser. PEARC '25, Association for Computing Machinery, 2025, ISBN: 9798400713989.
- [2] **Aniruddha Rakshit**, S. Reddy, R. Ramnath, A. Arora, and J. Boubin, “Righteous: Automatic right-sizing for complex edge deployments”, in *2024 IEEE/ACM Symposium on Edge Computing (SEC)*, 2024, pp. 15–28.
- [3] R. Hafiz, M. R. Haque, **Aniruddha Rakshit**, and M. S. Uddin, “Image-based soft drink type classification and dietary assessment system using deep convolutional neural network with transfer learning”, in *Journal of King Saud University - Computer and Information Sciences*, 2022, pp. 1775–1784.
- [4] F. Ahmed, A. R. Choudhury, **Aniruddha Rakshit**, and M. Z. Hasan, “2020 ieee region 10 symposium (tensymp)”, in *An IoT Based System for Printing Braille Letter from Speech*, 2020, pp. 344–347.

## WORK EXPERIENCE

### State University of New York at Binghamton

Graduate Teaching Assistant

Binghamton, USA

Fall 2025–Present

### State University of New York at Binghamton

Part Time Lecturer

Binghamton, USA

Summer 2025

### State University of New York at Binghamton

Graduate Assistant

Binghamton, USA

Fall 2022–Spring 2025

### Daffodil International University

Assistant Professor

Dhaka, Bangladesh

Spring 2022–Summer 2022

## PROJECTS

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- **Drone Video Data Processing (2025)**

- Developed a pipeline to analyze which parameter e.g. padding, zooming, threshold increase, threshold decrease affect the detection accuracy from the video frame
- Created a Spotted Lantern Fly dataset, label the dataset and trained our models with this dataset.
- Run inference on 30 second video frame collected by DJI Matrice 600 using Canon EOS 5D Mark IV in 4K resolution which has most of the target objects.
- Analyzing the effect of inference time, energy consumption after zooming and padding in edge devices like NVIDIA Jetson Xavier and Orin.

- **Righteous (2024)**

- Developed Righteous, an edge deployment right-sizing tool for simulators and testbeds to tunable hardware, software, and network parameters.
- Proposed Informed Pareto Simulated Annealing (iPSA) to find near-optimal resource configurations based on user-defined performance goals.
- Achieved up to  $3.5\times$  better configurations and  $76\times$  faster optimization compared to SOTA techniques.

- **Third Eye (2023)**

- Deployed 8-bit quantized MobileNetV3-Large model to run inference faster with minimal accuracy loss on a Raspberry Pi 4B
- Built a transmitter node (Raspberry Pi 4B, Camera and LoRa) sending object labels to a receiver node. [\[Details\]](#)

- **Spotted Lantern Fly Detection through Drones (2023)**

- Trained YOLOv8 model with datasets from Penn State and the New York State Department of Agriculture and Management
- Submitted at Cornell Institute for Digital Agriculture Hackathon [\[Details\]](#)

- **Robot Task Planning with LLMs (2023)**

- Explored capabilities of LLMs like GPT-3 to interpret grounded instructions and decompose them into robot-executable subtasks. [\[Details\]](#)

## SOFTWARE ARTIFACTS

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- Trained a custom MobileNetV3 model to detect 4 different stages of Spotted Lantern Fly.
- Deployed in collaboration with the New York State Department of Agriculture and Markets (NYSDAM).

## SCHOLARSHIPS AND AWARDS

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| • ACM/IEEE Symposium on Edge Computing 2024(SEC 2024) Travel Grant | November 2024 |
| • Jahangirnagar University Scholarship (5th Position in class)     | December 2013 |
| • Jahangirnagar University Scholarship (7th Position in class)     | August 2013   |