

# Sanjoy Kundu

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[Personal Webpage](#)

[Google Scholar Page](#)

[LinkedIn](#)

## Profile Summary

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About 3 years Research experience on computer vision and deep learning

Areas of interests are but not limited to Scene Graph Generation, Visual Question Answering, Image and Video captioning, video understanding

## Education

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PhD in Computer Science (CS) January, 2020-Present  
Oklahoma State University, Oklahoma, USA

Master of Science in Computer Science and Engineering (CSE) January, 2020  
Stamford University, Bangladesh

Bachelor of Science in Electronics and Communication Engineering (ECE) September 2013  
Khulna University of Engineering & Technology (KUET)

## Research Experience

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*Recent Research:*

- ❖ Iterative Scene Graph Generation using generative graph transformer  
**Areas Explored:** Scene graph generation on visual genome dataset using GGT. Sampling the number of edges to reduce the computational overhead for scene graph generation
- ❖ Open World Action recognition and object detection using pattern theory published in PRL, 2022  
**Areas Explored:** open domain action recognition with zero supervision for ego-centric video using pattern theory and knowledge graph
- ❖ Object detection on Biomedical images published in AIPR, 2020  
**Areas Explored:** Object detection on out of domain images of canine tumor cells using Faster RCNN and YOLOv3, Challenges of object detection on biomedical images compared to Natural images

*Under-Graduate Thesis:*

- ❖ Design of Metamaterial-based antenna and devices and analysis of their electromagnetic Properties published in ICCIT, 2014, EICT, 2014, ICIEV, 2013  
**Areas Explored:** Designing metamaterial structures with negative refractive index, metamaterial high gain antenna design and to reduce SAR with respect to conventional antennas

## Publications

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- ❖ Sathyanarayanan N. Aakur, **Sanjoy Kundu**, Nikhil Gunti, “Knowledge guided learning: Open world egocentric action recognition with zero supervision”, Pattern Recognition Letters 156, 38-45
- ❖ **Sanjoy Kundu\***, Nikhil Gunti\*, Bailey Hendrickson\*, Sunil More, Sathyanarayanan Aakur, “Benchmark and Evaluation of Low Resource Object Detection in Biomedical Images”, IEEE Workshop on Applied Imagery and Pattern Recognition, 2020
- ❖ Anik Mallik and **Sanjoy Kundu**, “Design of a Novel Dual-Band Microstrip Patch Antenna Operating at 2.45 GHz and 2.84 GHz with Practical Implementation,” in Proc. IEEE ICCIT, 2014
- ❖ Anik Mallik, **Sanjoy Kundu**, and Md. Osman Goni, “Gain and SAR improvement of a conventional patch antenna using a novel Pi-shaped DNG metamaterial,” in Proc. IEEE EICT, 2014
- ❖ Anik Mallik, **Sanjoy Kundu**, and Md. Osman Goni, “Design of a Novel Two-Rectangular UShaped Double Negative Metamaterial,” in Proc. IEEE ICIEV, 2013
- ❖ Anik Mallik, **Sanjoy Kundu**, and Md. Ashikur Rahman, “An FPGA-Based Semi-Automated Traffic Control System Using Verilog HDL,” in Proc. ICECTE, 2012.

## Technical Skills

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- ❖ ML/DL algorithms: CNN, RNN, LSTM, 3DCNN, Faster-RCNN, YOLO, Transformers etc.
- ❖ ML/DL tools: Pytorch, Tensorflow, Keras Open-cv, Scikit-learn, Pandas, Numpy, SciPy, Matplotlib, NetworkX
- ❖ Programming Languages: Python(Advanced), C(Intermediate), Java(Intermediate), CSS(Intermediate)

## Voluntary Activities

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- ❖ Mentored one under-graduate student as part of the REU program *Summer 2022*
- ❖ Worked as a reviewer for CVPR 2022, ACM Multimedia 2021, RA-L, ICPR 2022, ICMLA etc.

## Leadership Experiences

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- ❖ Sports Secretary, Bangladesh Student Association, Oklahoma State University, Stillwater, OK *January 2022 - Current*

## Industry Experience

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**Engineer**, Technology, NOC: (Network Operation Center) **Fiber@Home Limited** (<http://www.fiberathome.net/>)

*November, 2016 - January 2020*

- ❖ Experienced with Optical fiber network
- ❖ Working experience with Cisco Switch, Router, Huawei switch, Router, OLT, Juniper Switch, Router etc.

**CMS Specialist**, Enroute Co. Ltd

*April 2015 – July 2015*

- ❖ Worked as a telecom **engineer** for a local telecom operator in Bangladesh

## Awards

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- ❖ Received Graduate College Robberson Summer 2021 Research and Creative Activity [Grant](#)
- ❖ Obtained government and non-government scholarships for good academic performances
- ❖ Divisional and Institutional awards for creative writing