

# Naren Doraiswamy

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## **Education:**

### **RNS Institute of Technology, Bangalore**

Bachelor of Engineering (Honors) in Electronics and Communication, *Aug 2012- June 2016*

- Percentage: 79.14%.(Top 5% in class)    Converted GPA (According to WES): 3.8/4.0

**Thesis:** A numerical framework for feature extraction and simulation of a Ground Penetrating Radar using Finite-difference time-domain (FDTD) algorithm.

## **Research and Work Experience:**

### **Image Analysis and Computer Vision (IACV) lab, Indian Institute of Science**

Deep Learning and Computer Vision Researcher

*Aug 2018 – Present*

- Developed few-shot object/video segmentation algorithms to segment unseen novel classes at test time.
- Developed a few shot semi-supervised domain adaptation algorithm from an active learning perspective.
- Working on developing efficient algorithms semi-supervised and universal domain adaptation methods.

### **Robert Bosch, India**

Associate Software Engineer, Statistical machine learning

*Aug 2016 – July 2018*

- Worked on developing data based models in component model team for engine management systems.
- Developed machine learning models for key engine parameter estimations like common rail pressure, turbo-charger lag which were used in vehicle simulation modules.
- Initiated the development of inference model for cylinder fill correction factor using calibrated data from Original Equipment Manufacturers (OEMs).
- Also worked on model predictive control systems for developing the Hardware in-Loop (HiL) models.
- Keynote speaker at Bosch technical forum.

### **Student Satellite Program, Indian Space Research Organization**

Research Intern

*Jan 2015 - July 2015*

- Developed gyro-sensor estimation & attitude control modules in satellite system using KALMAN filters.

## **Publications:** (\* denotes equal contribution)

### **Active learning for few shot semi-supervised domain adaptation.**

**Naren Doraiswamy\***, Titir Dutta, Soma Biswas, Sawa Takamuku, Aditya Chepuri, Balasubramanian Vengatesan, Naotake Natori. (Under review)

### **Weakly supervised few-shot object segmentation using co-attention with visual and semantic embeddings. ([pdf](#))**

Mennatullah Siam\*, **Naren Doraiswamy\***, Boris Oreshkin\*, Hengshuai Yao, Martin Jagersand.

**IJCAI 2020 (Acceptance Rate: 12.6%)**

### **One-shot weakly supervised video object segmentation. ([pdf](#))**

Mennatullah Siam\*, **Naren Doraiswamy\***, Boris Oreshkin\*, Hengshuai Yao, Martin Jagersand.

**ICLR PML4DC workshop 2020**

### **Manifold co-teaching for semi-supervised domain adaptation**

**Naren Doraiswamy\***, Varun Jampani, Soma Biswas. Under Preparation

### **Universal domain adaptation using self-supervision.**

**Naren Doraiswamy\***, Varun Jampani, Soma Biswas. Under Preparation

## **Teaching Experience:**

### **Deep Learning Mentor @ Udacity ([link](#))**

*Jan 2018 - Oct 2020*

- Advice on AI technical topics, explanation of incorporating and building efficient deep learning models.
- Provided 1:1 mentoring sessions for students enrolled in the Udacity AI nanodegrees.
- Provided actionable and helpful feedback to student projects in their code development

### **AI Coach @ AI Saturdays Bangalore**

*Jul 2018 - Apr 2019*

- I taught deep learning every Saturday at a community meetup aimed towards building a passionate AI community in the city.

## **Skills:**

### **Programming skills:**

- Python, C, C++, Matlab, Bash.

### **Toolkits/Frameworks:**

- Pytorch, Tensorflow, MXNet, OpenCV, Caffe

## **Awards and Honors:**

- Ministry of Human Resource Development (MHRD) Scholarship, Government of India.
- Social welfare Scholarship, Karnataka State Government.
- International science Olympiad finalist 2012.
- Jnanamitra Pratibha Puraskara award for outstanding performance in 10<sup>th</sup> Board Examination.

## **Volunteer Experience:**

- **Bosch CSR group:** Part of the group which taught mathematics and science classes for underprivileged high school kids.
- **MUST Research Club:** Part of the enthusiastic AI non-profit group headed by the principal researcher of Salesforce, India which holds seminars, panel discussions and classes about AI.

## **Extracurricular activities:**

- District level football player.
- President of the science and literary club in School.