

# Praveen Krishnan

POSTDOCTORAL RESEARCHER

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Postdoctoral researcher at **Facebook AI**. Currently working on building self-supervised neural networks for **photo-realistic generation** and **recognition** of textual images.

**RESEARCH INTERESTS:** Computer Vision, Information Retrieval and Document Image Analysis.

## Education

### International Institute of Information Technology, Hyderabad

PHD IN COMPUTER SCIENCE (CGPA: 8.22)

Hyderabad

2013-2020

### Amrita School of Engineering, Amrita University

M.TECH. IN COMPUTATIONAL ENGINEERING AND NETWORKING (CGPA: 8.6)

Coimbatore

2009 - 2011

### Amrita Institute of Science and Technology, Kerala University

B.TECH. IN INFORMATION TECHNOLOGY (CGPA: 7.41)

Kollam

2003 - 2007

## Experience

### Facebook AI

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Research Problem: Primarily worked on **TextStyleBrush**, a deep neural network for photo-realistic generation of textual images.

The project was featured in Facebook AI blog post, Newsroom post and also got a shout-out from the CTO. More details at:

<https://bit.ly/2YdNaX8>

Menlo Park, CA

Feb'20-Present

### Center for Visual Information Technology, IIIT Hyderabad

RESEARCH ASSISTANT

Role: Managing lab projects and collaborations with dual degree students in research problems.

Hyderabad

Jan'12 - Dec'19

### Computer Science Department, Amrita School of Engineering

FACULTY ASSOCIATE

Role: Undergraduate teaching instructor.

Coimbatore

July'11 - Dec'11

### Tech Mahindra Limited

TECHNICAL ASSOCIATE

Job Profile: Software Development and Support.

Pune

June'07 - June'09

## Awards & Fellowships

Sep'21 ICCV'21 Outstanding Reviewer Award

Aug'18-July'19 Amazon Alexa Fellowship

April'18 IAPR Nakano Best Paper Award at DAS'18

Oct'16 Google Travel Grant to attend ECCV'16

July'13-18 TCS Research Fellowship

Jan'12-July'13 IIIT Institute Fellowship

July'09-11 GATE Scholarship

Vienna

Amsterdam

## Publications

**Note: Total Citations: 491, h-index: 11 and i10-index: 12** (Source Google Scholar on Sept'21)

### Journals

1. **Praveen Krishnan**, Rama Kowvuri, Guan Pang, Boris Vassilev and Tal Hassner, *TextStyleBrush: Transfer of Text Aesthetics from a Single Example* [Under Review] (Pre-print available at arXiv).
2. **Praveen Krishnan**, Kartik Dutta and C.V. Jawahar, *HWNet v3: A Joint Embedding Framework for Recognition and Retrieval of Handwritten Text* [Under Review].
3. **Praveen Krishnan** and C.V. Jawahar, *Bringing Semantics in Word Image Representation*, Pattern Recognition 2020.
4. **Praveen Krishnan** and C.V. Jawahar, *HWNet v2: An Efficient Word Image Representation for Handwritten Documents*, IJDAR 2019.

### Selected Conferences

1. Jing Huang, Guan Pang, Rama Kowvuri, Mandy Toh, Kevin J Liang, **Praveen Krishnan**, Xi Yin, and Tal Hassner, *A Multiplexed Network for End-to-End, Multilingual OCR*, CVPR 2021.

2. **Praveen Krishnan**, Kartik Dutta and C. V. Jawahar, *Word Spotting and Recognition using Deep Embedding* (Oral, Best Paper Award), DAS 2018.
3. **Praveen Krishnan** and C. V. Jawahar, *Matching Handwritten Document Images*, ECCV 2016.
4. **Praveen Krishnan**, Kartik Dutta and C. V. Jawahar, *Deep Feature Embedding for Accurate Recognition and Retrieval of Handwritten Text* (Oral), ICFHR 2016.
5. Kartik Dutta, **Praveen Krishnan**, Minesh Mathew and C. V. Jawahar, *Towards Spotting and Recognition of Handwritten Words in Indic Scripts* (Oral), ICFHR 2018
6. Kartik Dutta, **Praveen Krishnan**, Minesh Mathew and C. V. Jawahar, *Improving CNN-RNN Hybrid Networks for Handwriting Recognition* (Oral), ICFHR 2018.
7. Kartik Dutta, Minesh Mathew, **Praveen Krishnan** and C. V. Jawahar, *Localizing and Recognizing Text in Lecture Videos*, ICFHR 2018.
8. **Praveen Krishnan**, Ravi Sekhar and C. V. Jawahar, *Towards a Robust OCR System for Indic Scripts*, DAS 2014.
9. **Praveen Krishnan** and C. V. Jawahar, *Bringing Semantics in Word Image Retrieval*, ICDAR 2013.
10. **Praveen Krishnan**, Ravi Sekhar and C. V. Jawahar, *Content Level Access to Digital Library of India Pages* (Oral), ICVGIP 2012.

### Preprints

1. **Praveen Krishnan**, Rama Kovvuri, Guan Pang, Boris Vassilev and Tal Hassner, *TextStyleBrush: Transfer of Text Aesthetics from a Single Example*, arXiv: 2106.08385 2021.
2. **Praveen Krishnan** and C. V. Jawahar, *Generating Synthetic Data for Text Recognition*, arXiv preprint arXiv:1608.04224 2016.

## Selected Academic Projects

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- Large scale image search engine (Computer Vision course project).
- Wikipedia Search engine (Information Retrieval course project).
- Pre-processing Algorithms for Tamil OCR (M.Tech. thesis project).
- Blind Navigation System (B.Tech main project).

## Teaching Experience/Professional Activities

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- Served as a reviewer for PAMI, PR, ICCV'21, CVPRW'20, ACCV'18, ICVGIP'14-20.
- Conducted lab sessions at summer school on deep learning for computer vision (SSDLCV) held at IIIT Hyderabad in July'16,'17 and '18.
- Served as a junior instructor for the executive course on "Foundations in AI and ML" held at IIIT, Hyderabad from Aug-Sept 2018.
- Conducted a short course on "Feature Learning and Embedding Techniques" at IIIT Hyderabad from May-June'2017.
- Conducted a lab session at DAS'2014 on "Building Scalable Solutions for Document Retrieval and Recognition" held at Tours, France.
- Took a tutorial on using LaTeX for writing research papers at IIIT Hyderabad, Dec'13.
- Served as a center cluster admin from 2013-2015.

## Selected Talks/Poster Presentations

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- TextStyleBrush, Computer Vision Summit'20 at Facebook.
- Information Retrieval from Handwritten Document Images, R & D showcase 2019, IIIT Hyderabad
- Learning Representation for Word Images at TCS Innovation Lab (Aug'17, Pune).
- Information Retrieval from Large Document Image Collection at TACTiCS 2014 Data Analytics Symposium (New Delhi).
- Machine Learning in Excel at IETE South Zonal Seminar on Networking paradigms and Cyber security (Coimbatore).
- Workshop on Fractals for High School students at NIT Calicut (Dec'10, Calicut).

## Skills

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<b>Programming</b>	Python, Matlab, LaTeX, Java
<b>Libraries</b>	PyTorch, TensorFlow, NumPy, OpenCV, Matplotlib
<b>Web</b>	PHP, HTML
<b>Languages</b>	English, Hindi, Malayalam

## References

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Available on request.