Jignesh Patel

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Research Interests

Deep learning, Computer vision, Remote sensing, Image processing

Education

2016–2022 **PhD**,
Dhirubhai Ambani Institute of Information and Communication Technology (DA-IICT), Gandhinagar, India,
CPI 8.80/10,
Thesis title: *Spatial and spectral regularisation in unmixing of remotely sensed data*
Supervisor: Dr. Manjunath V. Joshi.
Course work: Deep learning, Pattern recognition, Statistical communication theory, Linear algebra, System and Signal

2010–2012 **M.E. in Electronics and Communication**,
Gujarat Technological University (GTU),Ahmedabad, India,
CPI 8.78/10, Thesis title: *H.264 video codec Implementation in FPGA*
Supervisor: Dr. Haresh A. Suthar.
Course work: Image processing, Digital Communication, Information theory coding

2006–2009 **B.E. in Electronics and Communication**,
Hemchandracharya North Gujarat University (HNGU), Patan,India,
Percentage 75.30%.
Course work: Embedded system, Computer organizations, Data Communication and Networking

Experience

Mar. 2022 – till date **Assistant Professor**,
Indian Institute of Information Technology Vadodara- International Campus Diu, Diu (U.T), India.
Course taught: Computer Vision, Image and Video Processing, Deep learning, Probability and Statistics, Discrete Mathematics, Computer Organization and Architecture

Apr. 2021 – Mar 2022 **Assistant Professor**,
Chandubhai S Patel Institute of Technology (CSPIT), CHARUSAT, Changa, Anand.
Course taught:Computer organization, Data communication and networking

Jan. 2016 – Apr. 2021 **Researcher | Teaching Assistant**,
DA-IICT, Gandhinagar, India.
Course taught: Deep learning, Machine learning, Probability, Statistical communication theory, Digital communication, Embedded hardware design
Other responsibilities: Collaborated with various machine learning student projects, Taught in two machine learning workshops for ISRO scientist at DAIICT

Aug. 2012 – Dec. 2015 **Assistant Professor | Undergraduate Project Co-ordinator** ,
Parul institute of engineering and technology, Limada, Vadodara, India.
Course taught: Image processing, Microprocessors
Other responsibilities: Guided five M. Tech thesis

Skills

Programming Languages — Python, Matlab, C++, C, VHDL, Embedded C, Assembly

Deep Learning Frameworks	Tensorflow, Pytorch, Keras, Theano, Caffe,
Data science and machine learning tools	scikit-learn, numpy, pandas, matplotlib, seaborn
Publishing / Presentation	LaTeX, MS Office, LibreOffice

Publications

Journal

[1] A. Chouhan, K. Captain, A. Parmar, and **J. R. Patel**, "Defending cooperative spectrum sensing from byzantine attacks: An effective entropy-based weighted algorithm," *IEEE Wireless Communications Letters*, pp. 1–1, 2023. DOI: 10.1109/LWC.2023.3306814.

[2] R. Kumar, A. Parmar, K. Captain, and **J. R. Patel**, "Reinforcement learning for performance improvement in cooperative spectrum sensing," *Physical Communication (ELSEVIER)*, 2023.

[3] **J. R. Patel**, M. V. Joshi, and J. S. Bhatt, "Abundance estimation using discontinuity preserving and sparsity-induced priors," *IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing*, vol. 12, no. 7, pp. 2148–2158, 2019, ISSN: 2151-1535. DOI: 10.1109/JSTARS.2019.2906756.

Conferences and Workshops

[1] R. Shah, A. Parmar, Divya K., A. Chauhan, K. M. Captain, and **J. R. Patel**, "A dual-stream convolution-gru-attention network for automatic modulation classification [accepted]," in *16th International Conference on COMmunication Systems and NETworkS*, 2024.

[2] **J. R. Patel**, M. V. Joshi, and J. S. Bhatt, "Spectral unmixing using autoencoder with spatial and spectral regularizations," in *IGARSS 2021 - 2021 IEEE International Geoscience and Remote Sensing Symposium, Brussels, Belgium*, 2021.

[3] **J. R. Patel**, M. V. Joshi, and J. S. Bhatt, "A novel approach for hyperspectral image superresolution using spectral unmixing and transfer learning," in *IGARSS 2020 - 2020 IEEE International Geoscience and Remote Sensing Symposium, Hawaii, USA*, 2020, pp. 1512–1515.

[4] **J. R. Patel**, M. V. Joshi, and J. S. Bhatt, "A novel approach for abundance estimation using discontinuity preserving prior," in *IGARSS 2018 - 2018 IEEE International Geoscience and Remote Sensing Symposium, Valencia, Spain*, 2018, pp. 6167–6170. DOI: 10.1109/IGARSS.2018.8517950.

International Exposure

July 2018	Presented paper in the 38th *IEEE 2018 International Geoscience and Remote Sensing Symposium (IGARSS 2018)* at Valencia, Spain.
Sep. 2020	Presented paper in the 40th *IEEE 2020 International Geoscience and Remote Sensing Symposium (IGARSS 2020)* at Hawaii, USA.
July 2021	Presented paper in the 41st *IEEE 2021 International Geoscience and Remote Sensing Symposium (IGARSS 2021)* at Brussels, Belgium.

References

▶ **Dr. Manjunath V. Joshi**
Professor, DA-IICT, Gandhinagar, India
✉ *mv_joshi@daiict.ac.in*

▶ **Dr. Jignesh S. Bhatt**
Assistant Professor, IIIT, Vadodara, India
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