

Deep Patel

Curriculum Vitae

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Education

- August, 2018–Present **M.Tech(Res)**, *Indian Institute of Science (IISc)*, Bangalore, *CGPA: 7.7/10*.
Department of Electrical Engineering
Thesis' Topic: I am studying and designing algorithms for robust supervised learning in the presence of label noise
Advisor: Prof. P.S. Sastry
- July, 2012–July, 2016 **B.Tech in Electrical Engineering**, *PDPU*, Gandhinagar, *CGPA: 8.29/10*.

Work Experience

- September, 2017–July, 2018 **Project Assistant**, *EE Department*, IISc, Bangalore.
Advisor: Dr. Prasanta Kumar Ghosh
Funding Agencies: DST, India & Pratiksha Trust
- Design and creation of a dataset comprising of speech samples from patients with ALS and Parkinson's Disease
 - Automatic speech based onset and severity prediction of ALS and Parkinson's Disease
 - This work has led to two publications, one in **ICASSP 2018** and the second in **Interspeech 2019**
- August, 2016–September, 2017 **Graduate Engineer Trainee**, *Reliance Industries Ltd. (RIL)*, Jamnagar, Gujarat.
- Observation of electrical commissioning and maintenance activities at a Low Density Polyethylene Manufacturing (LDPE) Plant, RIL J3 Project

Teaching Experience

- September, 2020–Present **Teaching Assistant**, *EE Department*, IISc, Bangalore.
Course: *Stochastic Models and Applications*
- January, 2020–June, 2020 **Teaching Assistant**, *EE Department*, IISc, Bangalore.
Course: *Pattern Recognition and Neural Networks (PRNN)*

Projects

- March, **Sparse Signal Estimation by Maximally Sparse Convex Optimization.**
2019–April, Course: Compressive Sensing & Sparse Signal Processing .
2019 - For the problem of denoising, a convex optimization problem was solved which induces strong sparsity (stronger than ℓ_1 -norm) with the help of proposed parametric, non-convex penalty functions, and performance comparison was done with classical algorithms such as *Matching Pursuit*, *Basis Pursuit*, and *Hard Thresholding* methods. The task was to understand the theory and reproduce the experimental results. [code]

Extracurricular Activities

- June, **Team Member**, *EMPATHS*, IISc, Bangalore.
2020–Present - Organizing events related to mental health awareness and sensitization for the campus community
- June, **Team Member**, *NoteBook Drive (NBD)*, IISc, Bangalore.
2019–Present - Helped organize annual events such as *Children's Day Celebration*, *Note Book Distribution*, and *Scholarship Distribution* which are carried out across 25 government schools in and around Bangalore (~ 4000 students).
- Helped organize a weekly programme, *Science Mentorship*, wherein government school kids get to study science and maths via interactive experiments and inculcate scientific temperament

Relevant Courses

- Stochastic Modelling & Applications
- Linear & Non-Linear Optimization
- Compressive Sensing & Sparse Signal Processing
- Analysis-I
- Machine Learning
- Convex Optimization

Computer Skills

- Languages Python
- Software & Tools \LaTeX , MATLAB, Tensorflow, PyTorch

Publications (Related to Thesis)

- 2020 Patel, D. et al., '*Memorization in Deep Neural Networks: Does the Loss Function Matter?*' [under review]

Other Publications

- Interspeech 2019 Suhas B. N. et al., '*Comparison of Speech Tasks and Recording Devices for Voice Based Automatic Classification of Healthy Subjects and Patients with Amyotrophic Lateral Sclerosis*' [link]
- ICASSP 2018 Aravind Illa, et al., '*Comparison of speech tasks for automatic classification of patients with amyotrophic lateral sclerosis and healthy subjects*' [link]

Languages

- English
- Gujarati
- Hindi
- Kannada (Ongoing effort)

References

IISc, **Dr. P.S. Sastry.**
Bangalore Professor,
Department of Electrical Engineering
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IISc, **Dr. Prasanta Kumar Ghosh.**
Bangalore Associate Professor,
Department of Electrical Engineering
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