

Sheetal Jadhav

ELECTRONICS ENGINEER · · NIT SURATHKAL

Navi Mumbai, India

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Education

National Institute of Technology (NIT-K)

Surathkal, Karnataka

BACHELOR OF TECHNOLOGY (B.TECH)

2014-2018

- Electronics and Communication Engineering

Fr.Agnel School and Junior College

Navi Mumbai, Maharashtra

H.S.C

2011-2013

- Higher School Certificate

Fr.Agnel Multipurpose School

Navi Mumbai, Maharashtra

S.S.C

1997-2011

- Secondary School Certificate

Work Experience

Homi Bhabha Centre for Science Education

Anushakti nagar, Mumbai

VISITING RESEARCH FELLOW (PROF SANJAY CHANDRASHEKHARAN'S GROUP)

Feb 2020 - present

- Currently working on formulating an computational model to understand how our microbiome affects human behavior using deep reinforcement learning.
- Worked with fMRI data, to find functionally connected brain networks for face perception and understand their underlying cognitive machinery

Tata Insititute of Fundamental Research

Colaba, Mumbai

JUNIOR RESEARCH FELLOW (PROF SHUBHA TOLE'S LAB)

June 2018 - Nov 2019

- Involved in bioinformatic data analysis of Next-Gen-Sequencing data sets generated in the lab, in a study related to gain and loss of function of wnt signaling
- Learnt several wet lab biological lab techniques such as handling of mice, dissecting and sectioning brain tissue; processing brain tissue for detection of RNA and protein

Indian Institute of Technology, Bombay

Powai, Mumbai

RESEARCH INTERN

May 2017 - July 2017

- Worked on calibration of polarimetric SAR systems, in order to compare and analyze calibrated SAR data.

Indian Institute of Space Science and Technology

Trivandrum, Kerela

RESEARCH INTERN

May 2016 - July 2016

- Involved with developing methods to reduce oversegmentation in RBC images, to reduce the over-segmentation caused due to watershed algorithm, on highly clustered images

Skills

Programming

- Python (Tensorflow, Seaborn, Plotly, Scikit)
- MATLAB
- Latex
- R
- C

Lab Techniques

- Perfusion and dissection of mouse pups/brains
- Sectioning brain tissue on microtome and vibratome
- Histological techniques: In Situ Hybridisation and Immunohistochemistry
- Basic molecular biology techniques (PCRs, gel electrophoresis) and handling mice
- Handling of mice for various behaviour paradigms

Selected Projects

Delta Sigma AD converter

BACHELOR'S THESIS PROJECT

- Designed and implemented a delta sigma analog to digital converter using oversampling and noise shaping to achieve a 10bit resolution, that can be integrated with signal processing blocks

Alzheimer's Disease prediction

PYTHON | TENSORFLOW | SCIKIT

- Prediction of alzheimer's disease using logictic regression, knn, desicion tree classifier and support vector machine on an OASIS open source dataset

Functional connectivity analysis

PYTHON | FSL | SHELL SCRIPTING

- Worked on finding a functionally connected brain network for face perception and recognition using fmri data.

Embedded Systems

MATLAB | PYTHON | SHELL SCRIPTING

- Built an Indoor Positioning System (IPS) using Raspberry Pi and Wi-Fi nodes for a single room, to locate objects or people inside a building

Image Processing

MATLAB

- From a series of MRI images, brain tumours were extracted using various image processing techniques
- Geometric shapes like lines, circles and ellipses were detected in a wide variety of images, using the Hough Transform

RNA-seq data analysis

R SCRIPTING

- Worked on identifying differentially expressed genes upon comparative analysis of RNA data sets from a developing mouse brain

Rover

OPENCV

- From a rover made from scratch by a mechanical students team, fixed a webcam, which would provide live video feed and detect obstacles and moving objects in its pathway

Conferences

DOMESTIC

Jan 2021 **Poster presentation**, 7th Annual Conference for Cognitive Science(ACCS)

IISc, India

Jan 2020 **Participant**, No Garland Neuroscience meeting (NGN)

IISER Pune, India

INTERNATIONAL

July 2020 **Participant**, 29th Annual meeting of the Organization of Computational Neurosciences

OCNS

Extracurricular Activity

Project Encephalon (Student interest group in Neuroscience)

VOLUNTEER

Astronomy, photography, guitar and music, science communication

HOBBIES