

# Deepa Tilwani

VISITING RESEARCH INTERN @ AIISC

1112 Greene St, 5th Floor, Artificial Intelligence Institute, The University of South Carolina, Columbia, SC, 29208 USA.

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## Summary

Poses diverse involvement in analyzing, evaluating, preprocessing, and improving current models for neurological signals (EEG/ECG). Proficient in collaborating with high-performing teams to build AI/ML solutions for providing suitable and optimal solutions to health specialists. Open for collaboration, research work in the field of data science, machine learning or artificial intelligence. Interested in developing a better problem-solving strategy for challenging problems, and learning new technologies and tools if the need arises.

## Research Interests

Machine Learning, Deep Learning, Brain Computer Interface, Neuroscience, Artificial Intelligence for Health Care.

## Work Experience

### Visiting Research Intern

AI INSTITUTE, UNIVERSITY OF SOUTH CAROLINA

Columbia, SC, USA.

September 2021 - Present

- Adopting, utilizing and developing new approaches, methodologies for Lesion Mapping and classification in Aphasia.
- Actively participating in projects in research group at AI Institute.
- Building and implementing architecture road-maps for next generation Artificial Intelligence solutions for collaborators.

### Remote Research Intern

AI INSTITUTE, UNIVERSITY OF SOUTH CAROLINA

Remote - Columbia, SC, USA.

October 2020 - August 2021

- Planning and executing challenging technical problems.
- Organizing, analysing, pre-processing of ECG signals, using signal processing techniques.
- Designing pipeline for Autism likelihood in infants using Machine Learning.

### Graduate Teaching Assistant

THE LNM INSTITUTE OF INFORMATION TECHNOLOGY

Jaipur, Rajasthan, India

August 2019 - May 2021

- Assisted and evaluated undergraduate students in Computer Network, Data Structure, Database Management System and Advance Programming lab work.

### Data Science Intern

THE SPARKS FOUNDATION

Remote

August 2020 - September 2020

- Pre-Processing of the data set provided using numpy and pandas libraries in python.
- Extracting valuable information from data set.
- Worked on creating models using supervised machine learning techniques.

## Education

### The LNM Institute of Information Technology

M.TECH. IN COMPUTER SCIENCE AND ENGINEERING

Jaipur, Rajasthan, India

2019 - Pursuing

- CGPA : 7.42

### Govt. Women Engineering College (GWECA)

B.TECH. IN COMPUTER SCIENCE AND ENGINEERING

Ajmer, Rajasthan, India

2014 - 2018

- Percentage : 67.4

### Queen Mary's Girls School

INTERMEDIATE - 12TH

Ajmer, Rajasthan, India

2013-2014

- Percentage : 68.4

### Queen Mary's Girls School

HIGH SCHOOL - 10TH

Ajmer, Rajasthan, India

2011-2012

- CGPA : 7.2

## Honors & Awards

### INTERNATIONAL

Sept 2020 **2nd Prize**, LINZ Ars Festival -BR41N.IO HACKATHON

Linz

July 2020 **2nd Prize**, BR41N.IO: Brain-Computer Interface Designers Hackathon

Austria

## DOMESTIC

- 2016 **1st Place**, Presentation on AR and VR Technology
- 2015 **3rd Place**, Toast to Code- C Language
- 2012 **Silver Prize**, National Science Olympiad

GWECA

GWECA

Ajmer

## Projects

### Lesion mapping and Classification in Aphasia using Structural MRI's.

Columbia,SC,USA

VISITING RESEARCH INTERN

January 2022 - Present

- Analyzing damages caused by Aphasia in left hemisphere of brain using T2 weighted images.

### Predicting likelihood of Autism in infants using ECG's.

Remote- AI Institute University of

South Carolina

RESEARCH INTERN

Oct. 2020 - Present

- Analyzed ECG data-set of infants for early detection of Autism.
- Pre-processing, feature extraction and developing models using Machine Learning and Deep Learning algorithms.

### Data Analysis of ECoG Data

Remote-Linz

HACKATHON PROJECT

Sept. 2020

- Analyzing an ECoG data-set having the data of rock paper scissor hand movements or hand-poses from an epilepsy person in order to optimize pre-processing, feature extraction and classification algorithms. Compared machine learning algorithms results with state-of-the-art algorithms.

### Motor Imagery EEG BCI Data Analysis

Remote- Austria

BR41N.IO BRAIN COMPUTER INTERFACE DESIGNERS HACKATHON PROJECT

July. 2020

- Analyzed a motor imagery BCI data-set from a chronic stroke patient in order to optimize pre-processing, feature extraction and classification algorithms. Compared results with state-of-the-art algorithms.

### Freelancer Website

GWECA

MAJOR B.TECH PROJECT

Dec 2017- April 2018

- Website for final year project submission.
- Where user or freelancers registers themselves to search or request needed jobs of their interest.
- Any project or job can also be added by the companies who are looking for respective candidates who can willingly complete the projects provided.

## Publications

### INTERNATIONAL CONFERENCE ON DATA DRIVEN COMPUTING and IOT (DDCIOT-2021)

20-21 MARCH,2021

- Porwal S., Patel C.K., Tilwani D., Bansal S.K. (2021) A Comparative Study and Tool to Early Predict Diabetes Using Various Machine and Deep Learning Based Techniques. In: Mathur R., Gupta C.P., Katewa V., Jat D.S., Yadav N. (eds) Emerging Trends in Data Driven Computing and Communications. Studies in Autonomic, Data-driven and Industrial Computing. Springer, Singapore. [https://doi.org/10.1007/978-981-16-3915-9\\_29](https://doi.org/10.1007/978-981-16-3915-9_29)

## Skills

**Back-end** MySQL

**Front-end** HTML5,CSS

**Tools and Technologies** C, Python, LaTeX, Machine Learning, Matlab, Digital Signal Processing

**Languages** Hindi, English

## Certifications and Training's

### Data Analytics Virtual Training Program

Quantium

VIRTUAL TRAINING

Sept. 2020

- Analysed data of a daily store.

### Fundamentals of Scalable Data Science

IBM

CERTIFICATION

July. 2020

- Introductory Course on Data Science by IBM

### Python for Everybody Specialization

Coursera

CERTIFICATION

April. 2020

- Specialization Course for Python.

## **Indian Space and Research Organization**

*Jodhpur, Rajasthan, India*

SUMMER TRAINING PROGRAM- WEB DEVELOPER

*Jun. 2017 - July. 2017*

- Implemented back end using MySql which is communicating with client, along with two other team members who wrote the php logic's and designed front end.

## **Government Women Engineering College**

*Ajmer, Rajasthan, India*

FEST WEBSITE DEVELOPER

*Jan. 2016 - Mar. 2016*

- Designed website with other team members for college technical fest with a separate login portal for students and organizers.