Nidhin Harilal
Junior Undergraduate
Discipline of Computer Science and Engineering
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EDUCATION

Indian Institute of Technology, Gandhinagar *August 2017 - Present*
B.Tech. in Computer Science and Engineering Overall GPA: 8.42

Pragati Public School, Kota *2016 - 2017*
Intermediate / +2 (CBSE affliated) Overall Percentage: 90.4

DAV Public School, Surajpur *2013 - 2014*
Matriculation (CBSE affliated) Overall GPA: 10

RESEARCH / ACADEMIC PROJECTS

Deep Learning based Statistical Downscaling for Climate Projections June 2019 - Present
Prof. Udit Bhatia *Research Project*

- Earth System Models (ESM) are run at spatial resolutions too coarse for assessing effects this localized. The spatiotemporal nature of the climate system motivates the adaptation of deep learning approaches.
- Critiqued current Deep learning approaches towards Statistical Downscaling such as CNNs, LSTMs which fail at high frequency values. Inspected the architectures for their inefficiency to generalize.
- The Task is to develop a neural network architecture which outperforms current implementations for high-resolution weather forecast using low resolution ESM values.

CARO: An Empathetic Chatbot for People with Major Depression Aug 2019 - Present
Prof. Mayank Singh *Academic Project, Natural Language Processing*

- CARO is an attempt to tackle problems of the generalized health or monotonic responses associated with the current implementations of health/ counselling chatbots.
- Proposed chatbot would be sensing the conversational context, its intent and the emotions associated with it. Based on which, it shall generate an empathetic response or medical advice as required.

Simulating Brownian motion from unpredictability in quantum realm Oct - Nov 2018
Prof. Krishna Kanti Day *Academic Project, Physics Lab*

- Investigated the phenomenon of Quantum Tunnelling and designed a emitter reverse biased transistor circuit for generating random output. Unbiased the output by using Von Neumann decor-relation.
- Verified the randomness of output using tests such as chi squared and Monte Carlo pi test. Developed a simulation of Brownian motion using the random bits generated as displacement with the help of visualizing tool Matplotlib in python.

Maths behind Earthquakes April - May 2018
Prof. Chetan Pehlajani *Academic Project, Linear Algebra & Differential Eqns.*

- Studied regression based mathematical models which quantified direct damages from earthquakes to properties given the magnitude, intensity, depth of focus, location of epicentre and time duration.

OTHER KEY PROJECTS

Personal Assistant(Chatbot) Dec 2018
Hackathon, Inter IIT Tech Meet 2018, IIT Bombay

Developed a Personal Assistant Chatbot which will notify people to take medicines on time based on doctors prescription along with the feature of custom notifications. Additionally, Integrated features such as Live railway PNR status and railway availability.

POHAR- Post Cyclone Aiding System Nov 2018
Coding Hackathon Team Selection, IIT Gandhinagar

Developed a Post Cyclone Aiding System which helps to identify safe areas and hospitals with shortest routes in flood/cyclone hit areas. Integrated features such as availability of resources in safe zones with live update. Integrated a feedback system for obtaining status about various affected regions. This system was entirely built on Django framework with integration of APIs such as Google Maps.

INDUSTRIAL EXPERIENCE

Capgemini Technology Services Pvt. Ltd. May - Jul 2019
Machine Learning Intern

- Analyzed Facenet neural network architecture for Face Recognition from video frames of a scene using a stored database of faces with the constraint of 'one sample per person'.
- Built a scalable web-app Dashboard based on nodejs and flask which was integrated with Face detection model. Developed dashboard included feautures such as live face update for unrecognized faces, synchronous training of the model, recognition with cloud update. Firebase was used as a cloud database.

POSITIONS OF RESPONSIBILITY

Deep Learning Group, Metis - The Coding Club Aug 2019 - Present
Core Mentor and Project Lead

Hackrush: IIT Gandhinagar's annual Hackathon Nov 2018 - Feb 2019
Core Organizer and Question stakeholder

Academic Council, IIT Gandhinagar Sept 2018 - Aug 2019
Coordinator of Class Representatives and Course Feedback

Academic Discussion Hours Aug 2018 - Dec 2018
Teaching Assistant for Computing ES112, Introduction to Computing ES102

Class Representative Aug 2017 - Sept 2018
Discipline of Computer Science, Freshman Year

OTHER SKILLS AND QUALIFICATIONS

Languages	Python, C, Javascript, HTML/CSS
Frameworks	Tensorlflow, Keras, Flask, Django, NodeJS
Other Tools	Git, LaTeX, Arduino
Key MOOCs	Neural Networks and Deep Learning Specialization (Coursera), Tensorflow Specialization (Coursera)

KEY COURSES UNDERTAKEN

Computer Science	*Natural Language Processing, *Theory of Computing, *Operating Systems, *Digital Image Processing, Discrete Maths, Data Structures and Algorithms., Computer Architecture, Computing (Python)
Mathematics	Probability, Statistics and Numerical Methods, Complex Analysis, Calculus, Linear Algebra and Differential Equations

* to be completed by Dec '19

ACHIEVEMENTS

∗ Recipient of **Deans List: 2017-18 Sem II, 2018-19 Sem III**, awarded by IIT Gandhinagar for excellent academic performance.

∗ Qualified for BBC Fighting Fake News Hackathon. **(Google, Gurugram) (2018)**

∗Winner of CBSE All India Annual Science Exhibition **(Mount-Abu School, Delhi) (2014)**