

NITIN CHOUDHARY

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EDUCATION

Indian Institute of Technology Kharagpur

Senior Undergraduate

Integrated MS in Mathematics and Computing

July 2015 - Present

Overall GPA: 8.3/10

TECHNICAL STRENGTHS

| | |
|--------------------|--|
| Programming | C/C++/Java, Python, Lua |
| Libraries | Scikit-learn, Keras, Tensorflow, Torch, OpenCV |
| Platforms | Git, Linux |

EXPERIENCE

Naver Labs Europe

Summer Research Intern

May 2019 - July 2019

- Worked on the problem of Layout Understanding of documents, with Restaurant Menus as the dataset, in order to translate it.
- Formulated the problem as a Graph classification and segmentation, using GraphCRF and custom Edge-conditioned convolution to achieve the desired results
- Used PyTorch Geometric to create custom message-passing and solve the problem of simultaneous classification and segmentation of a graph

University of Alberta, Canada

Summer Research Intern - Dr. Russell Greiner

May 2018 - July 2018

- Built a predictive model to detect Schizophrenia among patients from brain's 4D fMRI scans giving over 87% accuracy
- Worked closely with medical teams to decide upon the feature extraction process and choice of brain parcellations.
- Created an ensemble model to incorporate the feature knowledge from all the parcellations, in addition to applying 3D convolutions on ReHO data of fMRI scans

Google Summer of Code

Student Developer - Sunpy (OpenAstronomy)

May 2017 - July 2017

- Wrote a full-fledged high-level JSOC Client, using drms package as its backend, to download astronomical data from JSOC servers.
- Wrote a full test-suite to cover the drms package, using pytest and different mock testing packages.

Dewinter Opticals, New Delhi

Deep Learning Intern

May 2017 - June 2017

- Was solely responsible for building a Convolutional Neural Networks model, to identify between 5 different types of graphite flakes present in grey cast iron.
- Used both Tensorflow and Torch as independent platforms to implement the neural network problem.
- Used OpenCV algorithms for image segmentation and stitching microscopic images.

- Worked on the source code of the company's flagship device Annie, which is a handy Braille tutor to bring learning and writing in reach of visually impaired people.
- Used multiprocessing module to play audio asynchronously from the device.
- Implemented connection of the device to the server using websockets so as to remotely monitor the device through an android or iOS device.

PROJECTS

Contextual Emotion Detection in Text

Nov 2018 - Feb 2019

Shared Task - SemEval

- Working on building a model that would detect contextual emotion in a conversation between 2 people.
- Used attention and hierarchical attention models with Bi-LSTM units to capture the context.
- Used character level representation along with word embeddings to understand the conversation slangs and typos.

GPA Predictor using Machine Learning models and neural networks

March 2017

Term Project - Prof. S. K. Barai

- Created an institute-level GPA predictor for a student, which would take his previous GPAs as input, and predict his GPAs in the upcoming semesters
- Used last 10 years of grades for over 50 students in each department as training data, so as to identify the difficulty level of each semester.
- Used k- Nearest Neighbour along with SVM to increase the acceptability of the prediction of outliers.

Fine grained propaganda detection in News Articles

Ongoing

Shared Task - Nlp4If

- Working on building a model that would detect propaganda present in a certain news article.

ACADEMIC ACHIEVEMENTS

- Recipient of Innovation of Science Pursuit for Inspire Research (INSPIRE) Scholarship
- Secured All India Rank 2, in National Cyber Olympiad in high school

PUBLICATIONS

Journal of Open Source Software(JOSS): drms: A Python package for accessing HMI and AIA data

NAACL 2019: Poster presentation on Contextual Emotion Detection in Text

POSITION OF RESPONSIBILITY

Kharagpur Open Source Society

Jan 2016 - Mar 2017

*Executive Head**IIT Kharagpur*

- Conducted Kharagpur Winter of Code, a program to introduce people to open-source development, which brought over 2000+ registrations.
- Conducted Linux-install fest in the campus, to promote use of Linux as the preferred operating system.
- Conducted Python Classes and Git workshop, to teach students the process of contributing to an open-source project.