

NAVEEN KUMAR CHOUHAN

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EDUCATION

Indian Institute of Technology, Mandi

B. Tech. Computer Science *GPA: 7.36*

Mandi, Himachal Pradesh

Aug 2016 - July 2020

Shiv Jyoti Sr. Sec. School, Kota

12th, *Percentage: 83.2%*

Kota, Rajasthan

July 2014 - Apr 2015

Shanti Nitetan Sr. Sec. School, Balotra

10th, *Percentage: 79.8%*

Balotra, Rajasthan

July 2012 - Apr 2013

RELEVANT COURSEWORK

- Advanced Data Structures and Algorithms
- Information and Database Systems
- Computer Organization
- Probability Statistics and Random Processes
- Artificial Intelligence
- Linear Algebra
- Deep Learning and Applications
- IoT Systems and the Cloud
- Introduction to Communicating Distributed Processes(Networking)
- Essentials of Entrepreneurship
- Principles of Economics

WORK EXPERIENCE

ShopX, Bangalore

Worked as a Data Science Intern

Dec 2018 | Feb 2019

- Create a fraud detection mechanism for their onboarding process.
- The mechanism involves detection and validation of consumer's national id cards and verifying information on id card with the details provided by the consumer.
- The mechanism also helps in classifying the shop type by the shop images provided by the consumer.
- The internship involves real life use case of deep learning and artificial intelligence and involves building models from scratch.

Center for Development of Advanced Computing, Pune

Worked with Dr.Narendra Karmarkar, Indian mathematician

Jun 2017 | Jul 2017

- Creating Web pages using python CGI to create an environment vaguely like BlueJ .
- The Environment creates function definitions for FORTRAN, C and python.
- Incorporating a latex environment into the web-page.

IIT Mandi

Worked with Dr.Padmanabhan, Asst. Professor IIT Mandi

Dec 2016 | Jan 2017

- Exploiting energy method to remove noise and extract useful segment of bird speech.
- Creating Graphical User Interface for the program using PyQt, scipy and numpy.

LANGUAGES AND TECHNOLOGIES

- **Computer Language Skills:** C, C++, Python, Scala, JavaScript, PHP, SQL, CSS, C#.
- **Other Tools :** Tensorflow, Keras, Apache Spark, Docker, Python CGI, Hadoop, Unity.

PROJECTS

Video Stenography Attack (Group Project)

Skills and Tools: Python, Keras, GAN networks

Steganography is a method of embedding a secret video in a cover video. So that only some specific person can see the video. Our project focuses on recovering the secret video from the cover video even if someone has destroyed some part of the video. We have trained two networks N1, N2.

N1 generates a video frame by embedding the secret video (multiple times at different position) in the cover video. Such that the generated video frame looks exactly like the cover video frame.

N2 can extract out the secret video even if some part of the video is destroyed (limited by some threshold).

Colouring Grayscale Cartoon Videos (Group Project)

Skills and Tools: Python, Keras, GAN networks

Neural style transfer is an optimization technique used to take two images—a content image and a style reference image — and blend them so the output image looks like the content image, but “painted” in the style of the style reference image.

Our project focuses on videos instead of the image, which helps network remember the scene context while colouring. We have trained two networks a generator and a discriminator network.

A generator is trained to generate colour video frames from the grayscale video frames.

A discriminator is trained to discriminate between the real and fake coloured.

Disturbing Network Traffic over Leased lines (Group Project)

Skills and Tools: IP tables rules, Bonding

We Designed a high-availability gateway which automatically switches between two connections in case of failure or restoration of any of the connection. The service work through a backup connection and monitors the health of the connection. In doing this switching task the service and user are not getting interrupted. Also when both the connections are live the traffic is distributed over them according to their health.

Generic Drug Store (Group Project)

Skills and Tools: Python, BeautifulSoup4, Google Map API

Scraped generic medicine data, their corresponding non generic medicines and local medicine stores' Geo-locations from more than 1000 web pages using BeautifulSoup4 and python multi-threading.

Created a SQL database which can map similar non-generic drugs and an online medical store to avail the cheapest available option having similar drug content. Also incorporated the facility of buying medicines from your nearest store using Google maps API.

SHORT PROJECTS

Traveling Salesman Problem (Group Project)

Skills and Tools: C++, Python, matplotlib

Computed the tour for traveling salesman problem on the euclidean and non-euclidean data set by simulated annealing with edge replacement. Real-time visual simulation of the path is generated with Python matplotlib.

Implemented an Intelligent bot to play Othello(Reversi) Game (Group Project)

Skills and Tools: C++

Othello is a two player board game, both player place their coins (Red and Black) on a board at valid places. The game ends when neither of player can make valid move and the player who has maximum number of coins wins. For each bot's move, bot generate game tree of the further moves with a height bound and select best move using alpha-beta pruning algorithm.

POSITION OF RESPONSIBILITIES

Robotronics Club IIT Mandi

Core Team Member for the academic year 2017 - 2018

Main Coordinator at Alumni Affairs, IIT Mandi

Student Representative

Hospitality Head at EXODIA, IIT Mandi

Technical and Cultural Fest of IIT Mandi

Finance Head at Ranneeti, IIT Mandi

Sports Fest of IIT Mandi

AWARDS

Topcoder University Series IIT Mandi Hackathon

Secured 4th position for developing skin diseases detecting(Deep Learning-based) web application which can detect 22 kinds of skin diseases.

Special Mention for Accident Free Roads

Received Special recognition for the project by Judges. For an economically cheap Solution requiring minimal maintenance.

Drawing Robot Project

Got 4th position among 27 interdisciplinary projects held under Science and Technology Council of IIT Mandi.

PERSONAL TRADES

Strengths :

- Quick Learner
- Self Motivated
- Creating A Positive Work Environment
- Responsible

Language Skills :

- English
- Hindi
- German(Elementary)