

# NIKITA AGARWAL

## B.Tech CSE Undergraduate

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nk-ag

## EXPERIENCE

### Software Engineer Intern @ Microsoft India

May, 2021-Present

WDX India Eng, Hyderabad

- Designed and implemented Widgets framework for Welcome Screen of Surface Hub. Made the Teams-Widget for Hub using Webview.

### Human-AI Teaming

Guide: Dr. Shashi Shekhar Jha

Jan, 2021-May, 2021

Accenture Technology Labs

-Formulated a **multi-agent single human teaming** problem with codependency to achieve a common goal with the aim of increasing the **team utility**. Developed and tested suitable use case to capture teaming aspects of human with AI agents.

## PROJECTS

### 22X7 Dashboard

- Flask

DC Office, Rupnagar

- Developed a fully functional interactive dashboard for district administration.
- Real-time graphing and Analysis:** Time Interval Filtering, region filtering and many other data-specific options to analyse data pictorially.
- Department and Rank System:** Departmental heirarchy with Covid-19, Judiciary, Police and Schemes dashboards, with rank based user access to different parts of Dasboard.

### Emotion based Music-Generation

- Keras, Tensorflow

- Used **Reinforcement Learning** to train an **LSTM**, on music files partitioned according to variance and arousal to generate music sequences.
- Achieved results with **Q-learning** and **G-learning** with *epsilon-greedy* for Happy and Sad emotions with a Music Theory tailored **reward function**.

### Microsoft Engage 2020

- Javascript

- Developed a Path Finding Web based Application, supporting various algorithms like **A\***, **IDA\*** and **Best First Search** amongst others.

### Pipelined RISC-V ISA Simulator

- C++

- Final Course Project of Computer Architecture Course
- Developed pipelined RISC-V-ISA simulator for **parallel instruction execution with dataforwarding, bit prediction and inter-state caches**.

More projects

## MISCELLANEOUS

- Participated in **Smart India Hackathon 2020**
- Got **merit prize for academic excellence** for 5 semesters
- Secured **98.36** percentile in **JEE Advanced, 2018**
- Anchored and was pivotal in organising the first ever **Tedx-Chowrasta** in Darjeeling.
- Volunteered** at Enactus and WomenTechNetwork
- Hobbies** include Debating, blogging and photography

## EDUCATION

### B.Tech in Computer Science and Engineering

IIT Ropar

2018-Present | CGPA: 8.95

### XII Boards

CBSE

2016-2018 | 94.3%

## TECHNICAL SKILLS

### Languages

C++ CSS Python Verilog Javascript XAML

### Libraries

Keras Tensorflow Matplotlib Pandas OpenAi Gym

### Tools and Other Skills

Matlab git Latex Flask Django PostgreSQL

## POSTITIONS OF RESPONSIBILIY

### Coordinator @ BOST Coding Club

2017-2018

Took sessions, explaining C++ concepts and organised intracollege coding contests.

### Member @ AI Community

2018-Present

Participated in several paper discussions.

### Logistics Head @ TedXChowrasta

2020-2021

Was responsible for sponsorship, organisation and coordination of the event.

### Former Member @ Debating Club

2018-2020

Qualified as Panel Adjudicator in the InterIIT Debating Competition, 2018

Participated in Debutant, 2018

## COURSES

**Computer Science:** Data structures, Digital Logic Design, Computer Architecture, Programming Paradigms, Digital Image Processing, Databases, Algorithms, Operating Systems, Reinforcement Learning, Software Engineering, Computer Networks, Theory of Computation  
**Mathematics:** Calculus, Linear Algebra, Differential Equations, Discrete Mathematics, Probability and Statistics.