

# Amandeep Kaur

Passionate about leveraging AI for social good.

✉ [akaurreehal@gmail.com](mailto:akaurreehal@gmail.com)  [Github](#)  [LinkedIn](#)

## EDUCATION

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**Indraprastha Institute of Information and Technology Delhi**  
*Undergraduate student in Computer Science and Engineering*

*Jul'18 - Jul'22*  
GPA: 8.76/10.0

## WORK EXPERIENCE

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### Google Research

*Jul'22 - Present*

*PreDoctoral Researcher* advised by [Alok Talekar](#), [Dr. Gaurav Aggarwal](#)

- Supported key engagement with the government of India addressing food and water security, which was formalized under a **MoU with the ministry of agriculture**.
- Developed ML models to predict **pan India crop maps** using 10m resolution satellite imagery. Currently at **80%** accuracy for top-5 crops.
- Devised **dataset creation methodology** in absence of standard Indian datasets and performance metrics.
- Created data pipelines from scratch to process TBs of data for large scale model training.

### Midas Lab - IIITD

*Aug'21 - Nov'21, Feb'22 - May'22*

*Student Researcher* advised by [Dr. Rajiv Ratn Shah](#)

- Increased accuracy of a head gesture assisted typing technology from 86% to 92% **(+6%)** by adding two camera feeds from various angles to improve head-pose detection.
- Introduced self attention mechanism and new modalities like gyroscope and accelerometer to the model to get another increase of **+4%**. [\[Demo Video\]](#), [\[Poster\]](#)

### Royal Bank of Scotland - Natwest Group

*May'21 - Jul'21*

*Software Engineer Intern*

- Reduced development & testing time by splitting the monolithic code base into separate layers, persisting intermediate outputs so the layers could be altered and tested individually.

### Human Machine Interaction(HMI) Lab - IIITD

*Aug'20 - Nov'20*

*Student Researcher* advised by [Dr. Jainendra Shukla](#)

- Reviewed and **designed speech data collection methodology** for model training in Sakshar: an interactive system to help Indian children learn English pronunciation.
- This led to creation of a data collection web-app. [\[Demo Video\]](#)

## PUBLICATIONS

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### 1. [Agricultural Season Detection At Scale](#)

**First author**, Oral presentation at *American Geophysical Union, 2023*

### 2. [Developing a Digital Database of Soil Health Metrics Across 20 Million Individual Smallholder Farms in India](#)

To be submitted to *Nature, 2024*

## FEATURED POSITIONS OF RESPONSIBILITY

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- **Host/Co-founder @ GitaMitra** - online community for weekly Gita listening; since July 2021.
- **Speaker @ Google For India 2022** - [\[Talk\]](#) about landscape understanding using satellite imagery.
- **Python Code Reviewer @ Google**
- **Mentor @ Climate Tech Startup Meet 2023** organised by Google.
- **Host** for Aayush Patel, Intern @ Google Research India (w/ Ishan Deshpande)

## TECHNICAL SKILLS

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- **Languages:** Proficient in Python, comfortable in Java, C++, Javascript, HTML, CSS
- **Tools & Frameworks:** Git, IntelliJ, Google Colab, Tensorflow, Sklearn, Keras, pandas, Numpy, Scipy
- **Coursework:** NLP, AI, CV, Data Mining, GPU Computing, Algorithm Design & Analysis, Database Systems, Computer Organisation, Quantitative Biology, Computer Networks, Distributed Systems

## SELECTED ACADEMIC PROJECTS

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- **Food prices prediction** - 2023 | Python (sklearn)  
HungerHackathon'23 project where we used relevant topics in news articles to predict food price hikes in Niger, Africa
- **ClarityInCharity** - 2021 | Solidity, Web3, HTML/CSS/Javascript, Ganache  
A blockchain powered transparent charity platform where donors, beneficiaries and shops can join hands for greater good.
- **MathQSolver** - 2020 | Python (Libraries - NLTK, Keras)  
A math word problem solver capable of solving basic +,-,/, \* problems using CNN for operation prediction and keyword searches for creating the final equation.
- **FightMate** - 2018 | Python (Libraries - OpenCV), Arduino  
A set of gloves and camera equipped cap that tracks opponent's hand movements and signals the user on which hand to use in order to punch/defend.

## COMMUNITY ENGAGEMENTS

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- **Moderator** for #IAmRemarkable workshop at Google Day of Learning.
- **Volunteer** at Google Booth @ ICCV 2023.
- **Teaching Volunteer** @ GoogleServe Data Science Class. [\[Slide deck\]](#)
- **Frequent Speaker** @ M2U2 weekly paper discussions. [\[Slide deck\]](#) on Remote Sensing.
- **Student Senate Coordinator** - for Self Growth and Community Work @ IIITD
- **Teaching Volunteer** for Maths and Theatre, SummerCamp@IIITD'19
- **Student Mentor** helping 8 new joining undergraduate students @ IIITD
- **Organising Team Lead** for technical hackathon, Hack-IIITD'19

## ACCOMPLISHMENTS

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- **1st Runner up** @ IIITD hackathon - Switch Smart
- **Engage 2020** - Microsoft Codess and Mentorship Program, among top 1% of Indian women.