

# Avika Joshi

## Summary

**Multidisciplinary AI researcher, builder, and open science advocate working to make emerging technologies more ethical, inclusive, and globally impactful.**

With hands-on experience at **MIT CSAIL** and the **University of Cambridge**, she has contributed to cutting-edge work in **semantic AI, climate data synthesis, and agentic systems**, while leading initiatives on **responsible AI, FAIR data, and open knowledge in the Global South**. A **Harvard HPAIR keynote speaker, UNICEF Climate Champion**, and open-source contributor, she bridges engineering with ethical innovation.

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## Education

Btech (2024-2028) @ Delhi Technological University (IT)  
High School Diploma @ Delhi Public School Rohini

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### **MIT CSAIL – Mantis (Manolis Kellis Lab)**

*AI Intern (May–July 2025)*

- Building intelligent visualizations and agentic interfaces for Mantis, a CSAIL-born platform.
- Working at the intersection of computer vision, IoT, and interactive AI systems.
- Introduced and implemented a novel paradigm for widget engineering methodologies for Mantis Coding notebooks (successfully delivering the first-ever widget). This achievement was documented in the official Mantis demos repository curated by Prof. Kellis.: <https://www.dropbox.com/scl/fi/pvrqoneniteoilv9s3igy/Avika-Mantis-Coder-Demo.mp4?rlkey=1ccf1m6cgadx24t3fnh15d6va&dl=0>
- improved the overall architectural design as well as functionality of the MantisAI Software by integrating a query based search and filtering mechanism for UI connected to the backend for efficient usage
- enabled easy accessibility to “Mantis Coding Notebook” right from the default view of the Mantis User space
- Fixed bugs
- Worked on Mantis extension package for VS Code to enable real-time sync
- Worked on AI Agents and co-creator agents for Mantis

### **Semantic Climate University of Cambridge & NIPGR**

*Intern – AI/ML and Data science (May–July 2025)*

- Engaged in daily sessions directly with Dr. Peter Murray-Rust updating him regarding progress and was celebrated highly for the work presented during lab meetings often referred to as “our leading exponent” by Dr. Peter Murray-Rust.
  - Developed interfaces, MLOps and pipelines to make climate data: pictorial, figurative, textual and graphic data presentable and understandable to the masses promoting data democracy

- Worked on LLM-RAGs in collaboration with a German student under Dr. Simon Worthington
- implemented supervised as well as unsupervised learning principles in the new tools developed for data analysis
- Learnt, implemented and wrote programs with pre-existing python libraries pandas numpy pdfplumbers even matplotlib etc. and published a new tool for ipcc image data synthesis and analysis with pypi under the semantic climate initiative.
- hosted events and hackathons ai-powered literature review and assessments for students as well as working professionals.
- increased participation and engagements by approximately 30%

### **Keynote Speaker, Winner of Harvard Impact Challenge'25 and Delegate**

*Harvard Project for Asian & International Relations (HPAIR)*

Feb 2025 – Present

- Winner of the HPAIR Impact Challenge 2025 (Team JalKothaS – flood solution for Assam).
- Delivered keynote; selected in the top 0.0012% of global applicants.

### **Section Leader**

*Stanford University — Code in Place*

Apr 2025 – Present

- Mentoring international students in Python as part of Stanford's global coding initiative.
- Conducted weekly sessions

### **Project Manager & Analyst Intern**

*Walford Capitals*

Mar 2025 – Present

- Promoted from Market Research Intern to Project Manager for the WC2502 project.
- Leading tech integration for a finance-AI hybrid platform with IIT Madras.

### **Anchor & Cultural Ambassador**

*Uttarakhand Saanskritik Prasaar Samiti*

Jan 2025 – Present

- Youngest host of 2025 Indian Republic Day event; featured on Republic TV.

## **Apprentice**

- **McKinsey Forward Program**
- **Developer Apprentice @ Indus Action (Govt. of India Initiative)**
- **Robotics @ ROBOAI**
- **AI & LLMOps @GUVI IITM**

## ✂ Technical Skills

**Languages:** Python, C/C++, JavaScript, HTML/CSS, Bash, Julia

**AI/ML:** TensorFlow, PyTorch, Scikit-learn, HuggingFace

**Special Interests:** AI Agents, Autonomous Systems, Knowledge Graphs, OS-level development

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## 📁 Projects(Recent)

### AIRA – Conversational Voice AI Agent (2025)

- Developed a SIP-based voice assistant with real-time LLM dialogue, TTS, and transcript summary with NLP.
- Full integration with Asterisk, Whisper, and Coqui TTS; supports smart conversations over VoIP.

### Computer vision in 5 industries

- Made 5 projects based on computer vision and its application in 5 different industries: Healthcare, Finance, Sustainability, Art and security face recognition etc

### Agentic AI Research (Self-Initiated)

- Studying frameworks like ReAct, AutoGPT, BabyAGI, and LangGraph.
- Exploring the design of memory-augmented, goal-driven intelligent agents.

## Awards

**Climate Champion @ YuWaah India at UNICEF**

**Winner Harvard Impact challenge'25**

**Keynote speaker @HPAIRx (Harvard Project for Asian and International Relations)**

**7 yr gold medallist @DPS Rohini**

**20+ x Olympiad winner**

**School and one of the state toppers for 10<sup>th</sup> Grade: 99.2% overall**

**Additional: Senior Diploma Holder and passionate Kathak Dancer**

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