

# Abhishek Panchal

Computation and Modeling | Data Science | Game Development

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## About Me

Experienced Research Scientist skilled in Systems Programming, Design Thinking, High-Performance Computing, Web Design and Development with Strong Science Communication, Design and Data Visualization Skills with cross domain knowledge. Building Pralay, a strategic board game bringing together aspects of social science, science fiction and fight against climate change.

## Experience

### Mphasis AI and Tech Lab, Ashoka University

Research Scientist

Jul 2025- Present  
BharatSIM project

- Leading **BharatSIM**, an agent based simulation framework to study disease spread and interventions under the guidance of **Dr. Gautam Menon**
- Developing tools to improve the framework to study **vector borne and environmental diseases** adding GIS and social behavior.
- Study on modeling **Non communicable diseases** in society and understanding same from socio-economic frameworks

### Young India Fellowship Class of 2026, Ashoka University

Teaching Assistant

Statistical Thinking and Problem Solving in Modern Life- **Prof Santosh Venkatesh**

Jul 2025- Aug 2025

- Developed and presented foundational statistics teaching modules for a diverse cohort of YIF
- Extensively used data visualization tools (Desmos) to help understand complex statistical concepts with ease
- Average overall rating of 6.09 out of 7 in course feedback/review.

### NARL, ISRO, Department of Space

Scientist Engineer SD

Mar 2016 - Jul 2024

- Received **Outstanding Grade** for all 8 years in Annual Performance and Assessment Report.
- Participated in providing weather forecast support to more than **30 ISRO launch operations** at SDSC, SHAR.
- Developed WebGIS-based website to visualize near real-time weather forecast data. Involved in the operational running of WRF-based daily weather forecast at NARL.
- System administrator and Day-to-day management of BMS, Chillers, Cooling Towers, UPS, etc for the support of the Petascale Computing System at NARL. Liaison with all OEMs for efficient management of the system.
- Part of research activities related to improving the understanding of dynamical processes behind **extreme weather events** such as cyclones, thunderstorms and western disturbances. 8 published articles in peer-reviewed journals. Google Scholar Link. <https://scholar.google.com/citations?user=dC8ZOpMAAAAJ&hl=en>
- Developed python teaching modules and organized python training at the laboratory for the **capacity building** of junior scientists and Research scholars.

## Skills

**Advanced** Python, Scala, Full Stack Development, WebGIS, Affinity Design Stack

**Moderate** React, Blender, Manim (Math Animation Library), Linux Administration, LaTeX, TensorFlow, OpenMP, MPI, Reinforcement Learning

## Notable Projects

### Typhoid Sim

July 2025- Present

- Developed a agent based compartmental model to study effective usage of vaccine on population

### Pralay- The Climate Change Game ([www.pralaythegame.com](http://www.pralaythegame.com))

September 2024- Present

- Created **Pralay** A multiplayer strategic board game to study the climate related attitude change among players and drive discussions
- Designed graphics and developed game mechanism including game elements, board, logos and branding
- Playtested the game with more than 60 players physically and received average rating 6 out of 7 for the game
- Received Outstanding Experiential Learning Module Award for the project

### National Clean Air Program

Jun 2022-Jul 2024

- A member of executive committee for National Clean Air Program, I oversaw the execution of sampling and analysis of air samples over 4 Indian cities. Liaisoned with key stakeholders for the project and created data processing pipelines for the project

**Administrative Portal to visualize Near Real Time Fire Events**

Jun 2023 - Feb 2024

- > A flask based web application to help administrators and various stakeholder make informed decision regarding Agriculture related and Forest related Fire events.
- > *Software Stack: Python, Flask, REST API, Plotly, Leaflet*

**Forecast Visualization Website**

Jun 2021 - Dec 2023

- > A WebGIS based web application to visualize near real-time weather forecast data on GIS platform with interactive features
- > *Software Stack: GDAL, CRUD REST API, Python, Flask, Pandas, HTML, CSS, JavaScript*

 **Education**

**Young India Fellowship | Ashoka University**

2024 – 2025

*Post Graduate Diploma Liberal Studies*

3.83/4

**Indian Institute of Space Science and Technology**

2011 – 2015

*Bachelor of Technology Physical Sciences*

6.75/10