

# **TECHNICAL SESSION 3: Policy Frameworks, And Governance Mechanisms For AI In Climate Action And Resilience**

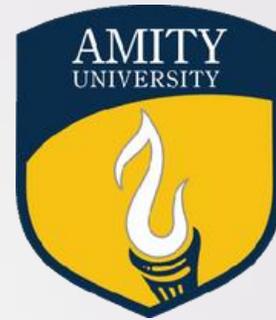
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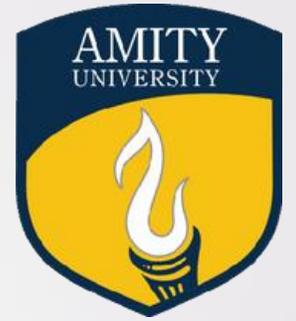
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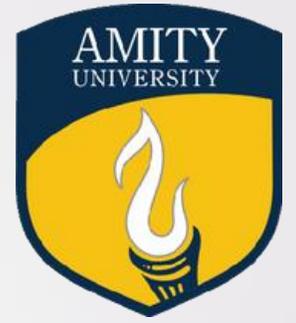
# Responsible AI

- Responsible AI is an approach to design develop and deploy artificial intelligence (AI) Applications from both an ethical and legal point of view.
- The goal of responsible AI is to employ AI in a safe, trustworthy and ethical fashion.
- Using AI responsibly should increase transparency and help reduce issues such as AI bias.



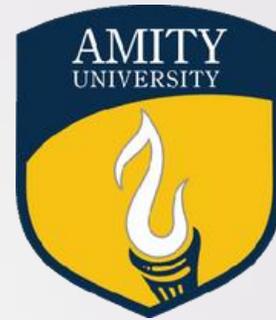
# Overarching Principles

- **Ethical Purpose and Societal Benefit**
- **Accountability**
- **Transparency and Explainability**
- **Fairness and Non-Discrimination**
- **Safety and Reliability**
- **Open Data and Fair Competition**
- **Privacy**
- **AI and Intellectual Property**



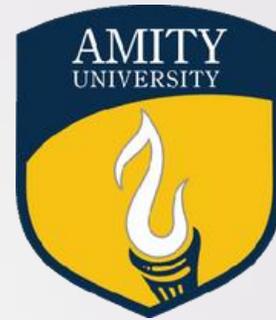
# AI In Climate Change

- AI accelerates climate and Weather Forecasting:
  - Climate modelling & forecasting
  - Disaster prediction & early warning
  - Energy efficiency & grid optimization
  - Carbon accounting & monitoring
- Scale and speed make AI indispensable for climate solutions

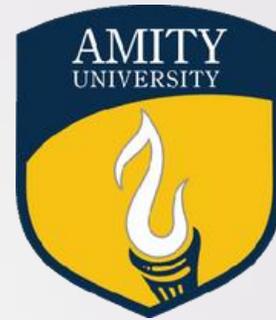


# Adversarial Effects of Unethical AI

- Climate decisions affect:
  - Human lives
  - Livelihoods
  - Ecosystems
  - Intergenerational equity
- Unethical AI can:
  - Reinforce inequality
  - Misguide policy
  - Undermine public trust

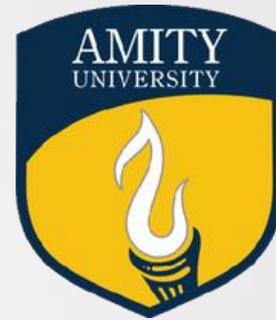


- AI can exaggerate or selectively report sustainability claims
- Risks:
  - Biased datasets
  - Optimistic assumptions hidden in models
  - Automated Environmental, Social and Governance (ESG) scoring without transparency
- Ethical requirements:
  - Disclosure of AI use
  - Independent validation
  - Transparent assumptions



# Data Ethics

- Climate AI relies on large-scale data:
  - Satellite imagery
  - Sensor networks
  - Socio-economic datasets
- Ethical concerns:
  - Underrepresentation of Global South
  - Exclusion of indigenous knowledge
  - Data extracted without consent
  - Data Biasing



# Carbon Footprint of AI Systems

- AI itself consumes:
  - Electricity
  - Water
  - Computing resources
- Large models can have significant emissions
- Ethical use demands:
  - Measuring AI's carbon footprint
  - Energy-efficient models
  - Renewable-powered data centers
- Does Use AI reduces Carbon Emissions net of its own impact



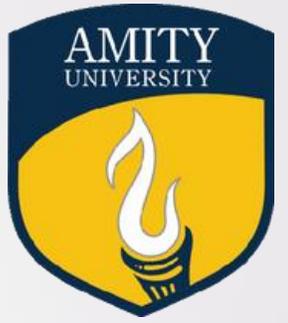
# Fairness in Climate Decision-Making

- AI informs:
  - Disaster relief allocation
  - Climate risk insurance
  - Urban planning & relocation
- Risks:
  - Algorithmic bias
  - Exclusion of vulnerable groups
- Safeguard:
  - Human-in-the-loop decision-making
- If AI supports decisions—it must not replace moral responsibility



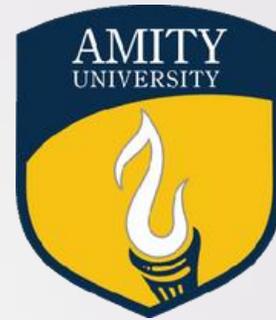
# Transparency & Explainability

- Climate Changes often influences public policy
- Challenges in Using AI for Climate:
  - Black-box models
  - Unclear uncertainty ranges
- Ethical expectations:
  - Explainable outputs
  - Clear communication of risk & uncertainty
  - Understandable visualizations
- **Trust comes from transparency**



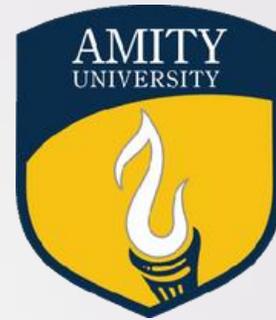
# Accountability & Governance

- **Who is responsible when AI causes harm?**
- Ethical governance requires:
  - Clear ownership of AI systems
  - Auditability of algorithms
  - Alignment with climate regulations
- No “responsibility gap” between humans and machines



# Inclusivity & Capacity Building

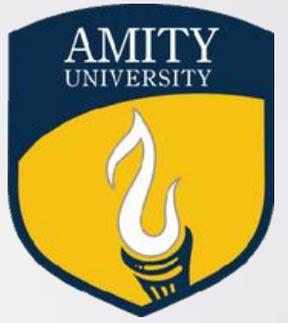
- Climate AI should not be dominated by a few nations or corporations
- Ethical approach includes:
  - Access for developing countries
  - Local capacity building
  - Context-aware and multilingual AI systems
- **Equity is central to ethical climate AI**



# A Simple Ethical Framework

## Five Guiding Questions

1. Does the AI reduce emissions overall?
2. Does it protect vulnerable communities?
3. Is it transparent and explainable?
4. Is there clear human accountability?
5. Does it prioritize long-term planetary well-being?



# Thank You