

# ETHICS SELF-ASSESSMENT QUESTIONNAIRE

We are a group of Artificial Intelligence students from the Autonomous University of Barcelona and we are carrying out a study on energy consumption and comfort in the classrooms of the Faculty of Engineering.

Part of our goal in this project is to create a predictive recommender system that can give directions to classroom occupants on what actions to take to maintain an appropriate level of comfort within classrooms.

## MOTIVATION AND OBJECTIVES

### 1. Why did you choose this challenge?

We chose this challenge because energy consumption and comfort in educational environments are critical for developing a productive and sustainable learning atmosphere. We believe that balancing comfort with energy efficiency can enhance the overall educational experience while also contributing to sustainability goals. This project allows us to apply our AI skills to a real-world problem that has immediate benefits for students like us and the environment.

### 2. What is the goal of your project?

The goal of our project is to develop a system that provides action recommendations to users in the classroom to maintain optimal comfort levels while minimizing energy consumption. The system will use data on classroom conditions and user preferences to suggest actions to adjust temperature, lighting, and other environmental factors.

### 3. What are the potential benefits of your project?

- **Enhanced Comfort:** Improved learning environments through better management of classroom conditions.
- **Energy Savings:** Reduced energy consumption and costs for the Faculty of Engineering.
- **Sustainability:** Contribution to the university's sustainability initiatives by optimizing energy use.
- **Data-Driven Insights:** Providing valuable data on user preferences and energy consumption patterns that can inform future policies and improvements.

## DATA PROTECTION

### 4. Does your activity involve processing personal data?

Yes, our activity involves processing personal data, such as temperature preferences and feedback on comfort levels, to personalize recommendations.

### 5. Does it involve the processing of special categories of personal data (e.g., sexual lifestyle, ethnicity, genetic, biometric and health data, political opinion, religious or philosophical beliefs)?

No, our project does not involve processing any special categories of personal data.

### 6. Does it involve profiling, systematic monitoring of individuals, or processing of large-scale special categories of data or intrusive methods of data processing (such as surveillance, geolocation tracking, etc.)?

No, our project does not involve profiling, systematic monitoring of individuals, or intrusive data processing methods. The data collected will be limited to user preferences and classroom conditions.

### 7. Does your activity involve further processing of previously collected personal data (including the use of pre-existing data sets or sources, and merging existing data sets)?

No, our activity does not involve further processing of previously collected personal data. We will collect new data specifically for this project.

## STAKEHOLDERS

### 8. In what other contexts could the technology you are developing be used?

Although you have to adjust due to changes in physical conditions:

- **Other Educational Institutions:** Similar recommender systems can be implemented in schools and universities to improve energy efficiency and comfort.
- **Office Buildings:** Enhancing employee comfort and reducing energy costs.
- **Healthcare Facilities:** Optimizing environmental conditions for patient comfort and recovery.
- **Residential Buildings:** Smart home applications for energy management and comfort.

9. **Which individuals, groups, organizations, or institutions might be directly affected by the technology and how?**

- **Students and Faculty:** They will experience improved comfort in classrooms.
- **Facility Managers:** They will benefit from reduced energy consumption and costs.
- **University Administration:** Insights from the project can inform energy policies and sustainability initiatives.

10. **Which individuals, groups, organizations, or institutions might be indirectly affected by the technology, and how?**

- **Local Community:** Broader sustainability efforts contribute to the community's environmental goals.
- **Energy Providers:** Changes in energy consumption patterns could impact demand and supply dynamics.
- **Environmental Groups:** Positive environmental impact due to reduced energy consumption.

11. **What is the relationship among the different stakeholders (both direct and indirect)? Could there be value tensions?**

The relationship among stakeholders involves collaboration towards shared goals of comfort and sustainability. However, value tensions might arise between the need for comfort adjustments and energy savings. Effective communication will be crucial to balancing these interests.

12. **Could the AI-based system you are developing potentially stigmatize or discriminate against people (e.g., based on sex, ethnic or social origin, age, genetic features, disability, sexual orientation, language, religion or belief, membership to a political group, or membership to a national minority)?**

No, the AI-based system focuses on non-discriminatory data such as environmental conditions and general comfort preferences, and does not involve any personal attributes that could lead to stigmatization or discrimination.

13. **Does the AI system you are developing interact, replace, or influence human decision-making processes (e.g., issues affecting human life, health, well-being, or human rights, or economic, social, or political decisions)?**

Yes, the AI system influences human decision-making related to maintaining classroom comfort and managing energy consumption, which can impact well-being and operational costs.

## EMBEDDING VALUES IN THE AI SYSTEM

14. **What values should the technology you are developing promote?**

- **Comfort:** Ensuring an optimal learning environment for students and faculty.
- **Sustainability:** Promoting energy efficiency and environmental responsibility.
- **Transparency:** Clear communication of how recommendations are made and how data is used.
- **Privacy:** Protecting the personal data of users and ensuring their consent.

15. **Is there an agreement among the group members about which values should be promoted?**

Yes, there is a consensus among group members on the importance of comfort, sustainability, transparency, and privacy.

16. **In case of disagreement, how are decisions made within the group?**

Decisions are made through a collaborative process involving open discussion, consideration of all viewpoints, and, if necessary, voting to reach a consensus.

17. **How can these values be embedded in the design?**

- **Comfort:** Incorporating adaptive learning to tailor recommendations to individual and group preferences.
- **Sustainability:** Designing algorithms to balance comfort with energy efficiency.
- **Transparency:** Providing users with clear explanations of how recommendations are generated.
- **Privacy:** Implementing data protection measures such as anonymization and secure data handling practices.

18. **Which UN Sustainable Development Goals does your project have the potential to contribute to and why?**

- **Goal 3: Good Health and Well-Being:** By improving the learning environment and comfort.
- **Goal 4: Quality Education:** By improving the learning environment and comfort in classrooms.
- **Goal 7: Affordable and Clean Energy:** Through optimized energy use and promoting energy efficiency.
- **Goal 11: Sustainable Cities and Communities:** By enhancing sustainability in educational institutions.
- **Goal 12: Ensure sustainable consumption and production patterns:** By reducing energy consumption and promoting sustainable practices.
- **Goal 13: Climate Action:** Reducing energy consumption and promoting sustainable practices.

By focusing on these goals, our project aims to support global efforts in providing quality education, improving health, promoting clean energy, and taking action against climate change.