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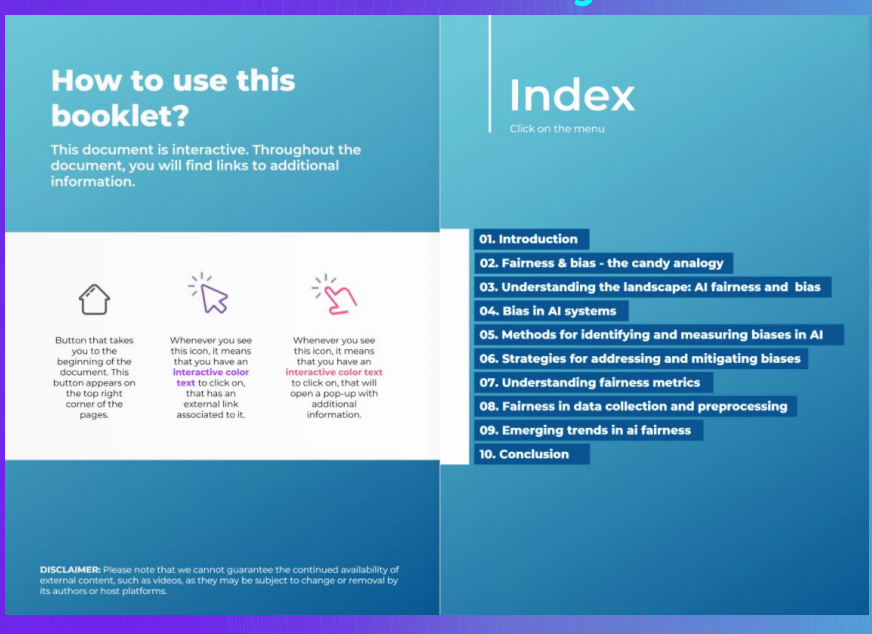
Challenging Bias in Big Data user for AI and Machine Learning



Welcome back to the CHARLIE project newsletter!

Welcome to the latest edition of the CHARLIE project newsletter! This month, we're spotlighting the "**Algorithmic Bias**" EQF6 course, **designed for Higher Education Institutions** aiming to enhance their students' understanding of AI ethics. With algorithms becoming increasingly embedded in society—across education, healthcare, finance, and more—it's crucial to address the hidden biases within them.

Featured Course: Algorithmic Bias

The "Algorithmic Bias" EQF6 course is a comprehensive educational program that addresses one of AI's most urgent challenges—bias within algorithms. In today's data-driven world, algorithms often determine who gets access to jobs, loans, healthcare, and even education. However, biases can creep into these systems, whether it's a job ad shown disproportionately to men or a healthcare algorithm that favors certain racial groups over others. This course aims to equip participants with the skills and knowledge needed to identify, mitigate, and manage such biases.

Why This Course Matters

Algorithmic bias isn't just a technical problem—it has far-reaching social and ethical consequences. While algorithms are often seen as neutral tools, their design, data inputs, and deployment can introduce unintended discrimination. For example, higher-paying job ads are often shown more to men than women, and healthcare systems may provide better care to certain racial groups. These biases threaten not only fairness but also public trust in AI systems, making it vital for tech professionals and educators to understand these risks.

The course is structured around **five Competency Units** (CUs), each designed to provide participants with the necessary tools to navigate and combat algorithmic bias in real-world scenarios:

CU1: Algorithms, Models, and Limitations

Learn the fundamentals of algorithms, their limitations, and the role they play in decision-making across sectors. Understand the underlying mechanics of algorithms and how their designs can inadvertently introduce bias.

CU2: Data Fairness and Bias in AI

Delve into the sources of bias in AI systems, including the data used to train these algorithms. Participants will learn techniques to identify, measure, and reduce bias in data, ensuring fairer outcomes.

CU3: AI Privacy and Convenience

Explore the delicate balance between maintaining user privacy and offering convenience in AI applications. This unit emphasizes the importance of protecting user data while creating effective AI systems.

CU4: AI Ethics – A Practical Approach

Learn to apply ethical frameworks to real-world AI projects. This unit covers transparency, accountability, and participatory design techniques to ensure ethical AI development.

CU5: Case Studies

In this capstone unit, participants will apply their knowledge through hands-on projects and case studies, gaining practical experience in addressing algorithmic bias in various contexts.

Target Audience: EQF6 Learners

The "Algorithmic Bias" course is targeted at learners in **Higher Education (Bachelor's level) and professionals** seeking to deepen their understanding of ethical AI. The course aligns with the European Qualifications Framework (EQF) Level 6, which requires advanced knowledge and cognitive skills, as well as a high degree of autonomy and responsibility.

By completing this course, students and professionals will develop critical competencies, such as:

- **Advanced Knowledge**

A deep understanding of how biases arise in AI systems and the impact they have across various sectors. Learners will explore fairness metrics, ethical considerations, and technical approaches to reducing bias.

- **Cognitive Skills**

The ability to analyze real-world cases of algorithmic bias, assess fairness in AI/ML systems, and develop strategies to mitigate these biases in practice.

- **Practical Skills**

Implement bias detection and mitigation techniques, evaluate their effectiveness, and integrate ethical principles into AI system development.

- **Autonomy and Responsibility**

Equip learners to make informed, ethical decisions regarding AI/ML systems, considering both societal impacts and individual responsibilities.

- **Communication and Collaboration**

Develop the ability to explain complex issues of algorithmic bias to both technical and non-technical stakeholders, fostering collaboration across disciplines.

- **Lifelong Learning**

Commitment to staying up-to-date with the latest developments in AI ethics and bias mitigation, ensuring continuous professional growth.

Get involved!

Excited about the future of ethical AI education? Check our website and follow our social media channels to stay updated on the official launch of our resources and upcoming opportunities to get involved. We'll also be sharing insights and news from the world of AI ethics, so stay tuned!

Together, let's build a future where AI serves the greater good!

https://charlie-project.uib.es/

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