Algorithmic foundations and ethics in AI: from theory to practice course

CU2 | AI Privacy and Convenience

Formative assessment exercises

Project number | 2022-1-ES01-KA220-HED-000085257

Formative assessment exercises*

* Instructors will find 2 potential formative assessment activities for this CU and can chose using any of them or both.

Formative assessment exercise 1

	Description	Comments
Task description	**Scenario Analysis:** a regional hospital plans to implement a new AI-driven HealthAI system. This system uses machine learning algorithms to analyze patient data and create personalized treatment plans. "HealthAI" is being implemented to enhance patient treatment outcomes by analyzing extensive health data using machine learning. **System Capabilities:** • Data Collection: Pulls from electronic health records, patient apps, and monitoring devices. • Data Analysis: Applies algorithms for treatment optimization and risk prediction. • User Interaction: Used by providers via secure networks and patients through a mobile app for health management. **Goals:** • Elevate healthcare quality via personalized insights. • Reduce readmissions through precise risk management. • Boost patient compliance and engagement with tailored health communications.	Propose methods to enhance the convenience of HealthAI for both patients and healthcare providers without compromising the privacy and security of patient data.
Description of how to do the task	Students need to identify potential privacy risks associated with the collection, storage, and processing of sensitive health data by HealthAI. Consider the implications of data breaches, unauthorized access and data misuse.	A report outlining identified privacy risks and proposed solutions to ensure data protection while enhancing system convenience.
Estimated time to do the task	60 minutes.	
Detailed description of how to deliver the task	Teacher will guide you on how and where to return the assignment.	
Information on the deadline for the task delivery	Your teacher will guide you on the deadline.	
Contact information or how to clarify doubts	Contact your teacher.	

Formative assessment exercise 2

	Description	Comments
Task description	**Design Requirements**: students will design ShopSecure AI, focusing on privacy by design principles, ensuring that all features inherently protect user data. The system architecture must include mechanisms for secure data collection, encrypted data storage, and anonymized data processing where possible.	
Description of how to do the task	**Scenario Overview**: As e-commerce continues to evolve, "ShopSecure AI" is conceptualized to revolutionize the online retail shopping experience. This AI application aims to personalize shopping recommendations while ensuring customers' privacy is never compromised. **System Capabilities:** • Data Collection: ShopSecure AI will gather data from user browsing habits, purchase history, and direct input via an interactive chat feature on the retail website. • Data Analysis: The AI uses this data to create tailored shopping recommendations and predictive shopping carts anticipating user needs. • User Interaction: Users interact with the system through a user-friendly website interface and a mobile app that offers real-time shopping assistance and personalized alerts. **Goals:** • To provide a highly personalized shopping experience that boosts user engagement and satisfaction. • To set a new standard for privacy in the e-commerce sector by implementing cutting-edge privacy protection measures. • To enhance customer loyalty and trust by transparently managing user data with consent at every step.	A detailed design document outlining the architecture of ShopSecure AI, including data flow diagrams that demonstrate privacy controls at each stage. Descriptions of the AI technologies and privacy-enhancing methods employed, explaining how these meet privacy by design standards.
Estimated time to do the task	60 minutes.	
Detailed description of how to deliver the task	Teacher will guide you on how and where to return the assignment.	
Information on the deadline for the task delivery	Your teacher will guide you on the deadline.	
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THANK YOU

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