Miami Dade College

Course Description

CAI4950C | Artificial Intelligence Capstone | 3.00 credits

Students will demonstrate competence to scope, acquire/explore data, model, evaluate, and deploy an AI/Machine Learning solution in a team environment. Students will create and present an AI solution. Must be taken during the last semester before graduation. Prerequisites: CAI4510C, 4420C, 4830C; Pre/Corequisite: CAI4525C.

Course Competencies

Competency 1: The student will display develop effective communication and team-building skills in an AI project by:
1. Selecting the project team members and defining their respective roles and responsibilities
2. Developing a mechanism for precise and consistent communication among team members
3. Setting clear goals and objectives to monitor the team's ongoing effectiveness

Competency 2: The student will successfully formulate project requirements and a statement of work by:
1. Determining project purpose and the scope of work to be conducted
2. Planning the project deliverables and the respective timeline with milestones
3. Selecting quantifiable criteria that must be met for the work to be acceptable and accepted
4. Delivering a formal report following the assigned format and style
5. Presenting their project to the college community

Competency 3: The student will find AI solutions to satisfy project requirements by:
1. Applying Human-Centered Design, Socially Responsible Computing, and Design Thinking to develop and implement an AI solution
2. Using the AI project lifecycle process: problem definition, data acquisition, data exploration and visualizations, model development, evaluation, and deployment
3. Implementing an AI solution demonstrating the use of Dashboards, Advanced Methods to Visualize Data, Data Cleansing, and the design of Machine Learning Models
4. Documenting each lifecycle phase following the assigned format and style

Competency 4: The student will articulate issues related to AI projects by:
1. Assessing the unique attributes and diverse nature of AI solutions
2. Examining recent trends affecting AI applications
3. Exploring ethical considerations and the potential pitfalls of implementing AI solutions in society

Competency 5: The student will demonstrate decision-making, problem-solving, and risk-assessment skills by:
1. Differentiating among different decision-making methods, including rational, naturalistic, negotiated, and procedural
2. Distinguishing the processes for creating a work breakdown structure, using an analogy, top-down, bottom-up, and mind-mapping approaches
3. Identifying risk and assessing and evaluating its impact on the respective solutions.

Learning Outcomes:

- Communicate effectively using listening, speaking, reading, and writing skills.
- Use quantitative analytical skills to evaluate and process numerical data
- Solve problems using critical and creative thinking and scientific reasoning
- Formulate strategies to locate, evaluate, and apply information
- Create strategies that can be used to fulfill personal, civic, and social responsibilities.
- Demonstrate knowledge of ethical thinking and its application to issues in society
- Use computer and emerging technologies effectively
- Demonstrate an appreciation for aesthetics and creative activities

Updated: Fall 2025