M.S. in Applied Data Science

IST 782: Applied Data Science Portfolio
For Students Graduating Fall 2024

Overview:

Students will choose assignments and projects worked on in courses during their studies, which reflect abilities specified in the program learning outcomes, for inclusion in their personal portfolio.

Specifically, for your portfolio, choose 3 or more course projects (for courses taken during you program), which reflect the abilities specified in the program learning outcomes.

Background Rationale for the Portfolio:

The MS in Applied Data Science is a practitioner's degree - while the curriculum is founded upon firm theoretical underpinnings, the program is designed to be a professional program with a strong emphasis on the applications of data science to generate actionable insights.

Many of the courses taken within the Applied Data Science program involve projects that demonstrate a student's ability to apply the concepts of data science at an advanced level within a particular domain. However, such a single course deliverable does not necessarily demonstrate that you have achieved the advanced cognitive strategies required by the program overall.

The goal of the portfolio is to provide evidence that you have achieved the program learning outcomes, and equally important, the portfolio should also demonstrate how you have been able to synthesize the degree's diverse learning outcomes into an integrated set of useful skills.

In short, to show mastery of applied data science, you need to be able to demonstrate that you have been able to master each fundamental aspect of this discipline (i.e., the program learning outcomes), while also being able to demonstrate you can synthesize these individual outcomes to provide actionable insight to the appropriate stakeholders.

What is the Portfolio:

Conventional use of the term "portfolio" in education often describes a requirement to archive past assignments from courses as the degree progresses and then to turn over this archive as physical evidence of learning in each course. Such activities are primarily recordkeeping functions - not usually required to be acts of overall reflection and synthesis.

However, in this program, the intent of the portfolio is for you to retrospectively reflect on how each course became a step toward your present abilities, in light of the program learning outcomes. While individual assignment deliverables will be described in the portfolio, a key part of the portfolio is an **analysis of learning that links your projects to the key concepts of the program learning outcomes and explains how your project deliverables have demonstrated your mastery of these program learning outcomes.**

Reviewing the Program Learning Goals:

As an interdisciplinary program, the master's in Applied Data Science provides students the opportunity to learn in a broad range of areas related to data science. Successful students in our program will be able to:

1. Collect, store, and access data by identifying and leveraging applicable technologies
2. Create actionable insight across a range of contexts (e.g. societal, business, political), using data and the full data science life cycle
3. Apply visualization and predictive models to help generate actionable insight
4. Use programming languages such as R and Python to support the generation of actionable insight
5. Communicate insights gained via visualization and analytics to a broad range of audiences (including project sponsors and technical team leads
6. Apply ethics in the development, use and evaluation of data and predictive models (e.g., fairness, bias, transparency, privacy)

Due Dates:

→ See Syllabus

Portfolio Deliverables:

1. A **written paper** that contains:
   - **a.** A description of each learning outcome
     - Provide the learning outcome text
     - Then explain the outcome in your own words.
   - **b.** A description of 3 (or more) projects. An internship project can be used if there are more than 3 projects described. The description should include:
     - Which course did you do the project (or internship)
     - What were the goals of the project
     - What technologies were used
     - What actionable insight was generated
     - For a group project, what was your specific contribution to the project
     - Which overall program learning outcomes were demonstrated via the project.
   - **c.** State which track you selected
     - Explain why you selected that track
     - Discuss what you learnt, at a high level, as it relates to your track
   - **d.** An overall synthesis providing:
     - A summary of how you achieved the all program learning outcomes
     - Reflections about the program
   - **e.** There is no length requirement for the paper; it needs tobe long enough to link all learning outcomes to your selected projects.

2. **Web Site / ePortfolio**

   The web site should have the following sections (or web pages)
   - **a. Overview**:
     - A description of the program learning outcomes
     - A high-level description of each of project included in your portfolio
     - An explanation of how you achieved the program learning outcomes (explaining which projects demonstrated which program learning outcomes)
   - **b. Project Descriptions**:
     - A more detailed description of each project
   - **c. Recorded Video Presentation:**
     - A Video presenting a summary of your overall thoughts on the program and what you learned in the program
     - The video should be 1-2 minutes long (use slides or not, that is your choice)
   - **d. Blog post:** Around 3,000 words, reflecting on your time in the program. It can cover topics such as:
     - What did you expect to learn in the program?
     - What did you learn in the program
       - For each learning outcome, how did you achieve that learning outcome
       - Briefly describe 3 projects, and how each project contributed to your education
       - Did you do an internship, iConsult or projects outside the classroom? If so, briefly describe how it contributed to your education
     - What was your favorite class? Why was it your favorite class?
     - What was the best part of the program? What was some of the biggest surprises?
   - **e.** ***Some additional notes:***
     - You can create your web site earlier than the stated deadline, and then use it to help find a job (ex. provide the link on your resume).
     - The presentation and descriptions should be targeted to people who are **not** data science experts.
     - The web site can be public, or password protected (your choice)
       - If Password protected, the password must be supplied when submitting the web site (for draft and final version).
     - *Hints on creating a web site (optional tools / reading):*
       - https://medium.com/coburb/building-an-urban-planning-portfolio-in-10-minutes-with-airtable-and-pory-fe8f4f37ca23
       - https://www.wix.com
         https://www.weebly.com/

- https://sites.google.com/view/togetherlearning/learn/digitalliteracy/portfolios