The Practicum in Intelligent Systems

As part of the education/training process, our MSAI students work on faculty directed projects in the Winter and Spring quarters. This work aims at giving them a design and development experience in which they work to solve an open-ended Artificial Intelligence (AI) problem to meet Partner needs. This work is part of a Practicum in Intelligent Systems and involves the design, development and presentation of AI solutions based on problems provided by our client Partners. Practicum work differs from Capstone projects in that the Capstone quarter is almost entirely dedicated to the project work while Practicum projects are done when students are still taking other classes.

Project objectives
The Practicum projects are aimed at exposing students to real-world problems, constraints, and data. In executing the project, students are expected to:

- Work with our client Partners to gain an understanding of problem scope, resource availability, and data and platform requirements
- Develop the best viable approach based on client needs and requirements
- Follow best practices in project management: establish realistic deliverables and milestones, plan, track, and report
- Exercise and enhance their skills as members of teams
- Hone their skills in written, graphical, and oral presentation
- Deliver a prototype solution within the time frame of the class

Project scope
The Practicum is run in the Winter and Spring quarters. Each term is run for ten weeks and most projects are designed around deliverables at the end of the quarter. Some projects may scope across multiple quarters if necessary. Projects and their initial scope are determined during the quarter prior to the running of the class.

Project dynamics
For Practicum projects, students work in a small teams of 2 to 3. The problems used to drive this work are scoped by a 10 week development period. Most of the problems are provided by our client Partners which include companies, not-for-profit organizations and other academic units within Northwestern. The work takes place under the supervision of an Artificial Intelligence faculty adviser, with additional feedback and review from the project sponsor.

Some teams may include advanced undergraduate developers working under the direction of our MSAI students as well as students from Northwestern University’s Kellogg MBA program to work with the team as product managers.
Project Focus
As one would expect, the projects are focused on applications of one or more Artificial Intelligence technologies. Examples of projects may include:

- Development of a Machine Learning approach to predict equipment failure
- Design and development of a task directed conversational interface
- Development of a classifier to identify money laundering activity
- Development of system for sentiment analysis for marketing
- Use of data describing sales, product and company descriptions to qualify customers
- Construction of a recommendation model based on social media behavior

In general, the nature of the problem is determined by the interests and needs of our client Partners.

Partner Responsibilities
While the goals for the students are focused on learning, we want to provide our Partners with genuine value and solutions to the problems that they are providing. To support this work, we are asking for a high level of engagement from our Partners. This engagement is focused on three primary areas: problem description, data availability, direction and guidance.

- Description of the problem and what would constitute a solution
- Access to the data associated with the work that needs to be done
- Development of a collaborative definition of project milestones and work plan

- Participation in ongoing reviews and final evaluation of the work

In general, projects will begin with a project kick-off meeting at the beginning of the quarter to establish the problem scope and definition. Along with the framing of the problem, this kick-off is when we expect our client Partners to map out the dynamics of their ongoing work with the students, including meeting and communication plans.

Project Deliverables
The general policy for Practicum projects is that client Partners will be given access to the final reports, presentations and code developed by students in the class. Any Intellectual Property developed will remain with the students and Northwestern but will be available for use with no restrictions. We understand that some Partners may want exclusive ownership of the work and the MSAI program is open to discussion of how that can be accommodated.

For further information, contact us:

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