Job Description:

The Construction Engineering and Management program of the Civil and Environmental Engineering Department at UW-Madison would like to invite applicants to apply for a Research Intern position. This hired person will be paid by the Civil and Environmental Engineering department on a student hourly basis.

The chosen Research Intern will work on designing highly secured, user-friendly, and sophisticated websites and Excel tools. The hired person will work closely with a team of innovative graduate students on existing projects. In this sense, from a computer science perspective, the progress made on the existing projects will be explained to the hired person by the computer scientist who wrote the code for these projects, so the hired person can work efficiently.

Requirements:

The hired person should have strong knowledge or willingness to learn and effectively use the following languages: Excel VBA (IMPORTANT), HTML5, CSS, JS, AJAX, JQuery, SQL, Amazon Web Services knowledge and R.

Also, the hired person should have taken CS 367 (IMPORTANT), CS 301, CS 354 or have relevant knowledge.

How to Apply:

Computer Science graduate and undergraduate students are encouraged to apply as soon as possible, before Friday (November 17th, 2017).

If interested, please contact Michael W. Ibrahim at mwwilliam@wisc.edu, Youssef Labib at ylabib@wisc.edu, and Professor Awad S. Hanna at ashanna@wisc.edu.

Existing projects:

Construction Readiness Excel tool (90% complete – Urgent):

This is a sophisticated and user-friendly Excel tool that evaluates the construction readiness degree of projects and assists project professionals to improve the project’s overall construction readiness. The tool enables its users to create an account for each project. Also, it enables the user to go through the tool for each project multiple times at different times of the project.

In each trial, the tool asks the user more than 200 binary questions spanning 15 categories. Based on the user’s responses, the tool calculates project’s overall readiness score as well as readiness score for each of the 15 categories. Using this information, the tool draws a gauge for the overall readiness score and compares it to a pre-calculated benchmark.
Moreover, the tool draws a spider chart for the 15 categories, and compares the score of each category with the user-specific target scores. Additionally, the tool outputs the factors that the user reported as “not performed,” and assists the user to develop an action list for each of these factors. Furthermore, the tool outputs company-level and industry-level best practices that are relevant to the project being evaluated.

More details of this tool will be shown to the applicants during the interview process.

**Project Manager Competency Excel Tool (50% complete):**

This is also an excel-based, user-friendly tool that evaluates the performance of Project Managers (PMs) of State Highway Agencies (SHAs). The tool is to be used by supervisors to assess the performance of subordinate PMs in order to know their strengths and be able to direct them to training programs that suit their needs to enhance their overall performance.

Using this tool, a supervisor can create his/her profile within which he/she can create a separate profile for each of their subordinate PMs. Within the profile of the PM, the supervisor can create a new assessment or continue a previously started one.

The assessment is divided into five categories within which there are 145 questions. Almost all questions have a five-point scale with a few exceptions that are binary. Based on the response to these questions, the tool outputs the score of the PM in each of these categories and displays it in a spider chart format. The chart also shows the results of previous assessments performed for the PM to show progress in response to training received. The tool also highlights the strengths and training needs for this PM to be of most use to the supervisor.

**Profitability Website (90% complete):**

This website enables its users to input his/her data through a survey. Then, the website automatically adds the user’s input to a database. Using this database, the website run some analyses, while specifying the user’s data as compared to the rest of the database. Then, the website outputs to the user a standardized report (about 50 pages) that summarizes the results of the analyses.