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Online Programming Judge- Applications for the classroom

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There are many online judges used to auto grade program correctness. Typically these systems were designed for use in judging programming contests like the International Collegiate Programming Contest (ICPC). These systems can also be used as part of a course curriculum.

Keywords: ICPC

Game play and its use in teaching computational thinking

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This talk will focus on game play and its use in teaching computational thinking.

Keywords: Computational Thinking

ACET as an Educational Computing Leader in Texas

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IT/Technical associations, the likes of ACM, IEEE, typically focused mainly on research and publication output. Though students and other non-researchers are welcome, they are not the primary beneficiaries of their work. ACET as an Educational Computing Leader in Texas, takes a more inclusive route in that it welcomes all IT professionals and strives to meet their research, pedagogical, and industry needs. In this presentation, the author discusses ACET's methodology and provide recommendations for its continued success.

Keywords: methodology, pedagogy

Hadoop: What is it and why do I care?

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Sure, it tastes great, but is it really what we want? Or is it just going to give us high blood pressure? We are collecting endless amounts of data. How do we tap into its potential? Or is trying to deal with all this data just going to give us high blood pressure too?

We can begin by asking bigger questions. We can begin by analyzing all the data available. This session will include a quick overview and demonstration of the distributed data framework: Hadoop. Allowing us to ask bigger questions . . . in an "easy to use" environment.

Keywords: bacon, data

Mini-Grant to Teach Classes Online

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Texas Lutheran University (TLU) is a traditional, private and only offer limited distance learning classes during the summer. There has been a desire to teach online classes due to various factors. One reason mainly was to keep up-to-date with the demand for this style of teaching. The author applied for a mini-grant t to teach two classes in this mode. The main aim of the study of the grant was to see if students have a rewarding experience similar to traditional offerings. The study involved the investigation of existing technology at TLU. Also, the author examined other types of technologies available either for free or for a small fee. Contacting publishers to acquire additional support was another approach. The study included multiple comparisons to traditional classes including the clarity of syllabus, testing, homework, communication, clarity of knowledge presented, quality of the learning, satisfaction, time management, and evaluating the end results provided by the students to decide whether to continue to offer online classes in the future. The author will share his findings and some of the challenges and the rewards of teaching a distance learning class.

Keywords: Online, Teaching, Technology, knowledge, learning

Exploring VBA and other Features in Excel as Problem Solving Tools

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During the summer of 2015, the author provided help to a local and major company. It was interested to find out that MS Excel was the main application for the decision making. The author explored various capabilities and the strength of the software to find out numerous and amazing features that can be used to teach students not only problem solving but also critical thinking. The presenter will show how to use Visual Basic for Applications (VBA). Also, the presenter will demonstrate some of the aha moments he came across in relations to the use of macros, pivot tables, using formulas with conditional formatting, the ability to manipulate massive amount of data, and the freshly discovered tips and tricks to different manipulate and use type of charts. This presentation is a fun one, but yet it is an incredibly productive one.

Keywords: VBA, EXCEL, Macro,Technology, knowledge, learning

The 3D Printing Technology: Past, Present, and potential applications in teaching, research and other academic activities

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The 3D printing technology, also known as additive manufacturing, is used for creating three-dimensional objects from a digital STL (Standard Tesselation Language) file.
A 3D printer is a type of industrial robot. After a brief introduction in the past and the present of 3D printing technologies, we'll present potential applications in teaching, research and other academic activities of our recently acquired MakerBot Desktop 3D Printer. Successive layers of Poly-Lactic Acid (PLA) material are laid down under computer control. PLA is an environmental-friendly corn plastic.

Our presentation will include descriptions of 3D printer-generated solids used for teaching classes such as Bioinformatics, Game Development, Discrete Structures, Foundations of Computer Science, and many more. In addition, we'll present some research projects where our 3D printer generated a rapid prototyping solid as the model for testing and visualization. We observe that the student interest toward learning increased this semester. We intend to assess and analyze the student interest due to the 3D printing technology. Another step is to consider offering a course on 3D printing technology.

Keywords: 3D printing technologies, industrial robots

Using the R Programming Language to Teach Undergraduate Statistics

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Undergraduate students who are required to complete an introductory statistics class are often apprehensive about the prospects of completing quantitative analyses. In recent years, advances in statistical computing have allowed faculty to introduce the fields of statistics and data science to students while focusing on computation and reproducibility. The open source R programming language is quickly becoming a popular and accessible tool among statisticians and social and behavioral scientists alike. R is an object-oriented programming language with a focus on flexible and powerful statistical and graphical computing processes. One drawback with R, in its native form, is that it is primarily a command-line tool. This is a hurdle for students with little to no computer science background, as interacting with a machine's command-line tools is a daunting task. However, an integrated development environment for R, RStudio, has been developed that opens up a variety of tools making reproducible research possible, such as easily sharing source-code and dynamic report generation. RStudio allows students to interact with R code in a dynamic computing environment. Assignment reports can easily be written in a shortcut-style language, Markdown, which allows for R code and graphics to be embedded in HTML, LaTeX, and Microsoft Word documents. This presentation will highlight practical methodologies in teaching undergraduate statistics courses using the R programming language inside the RStudio IDE. Examples from actual student assignments as well as best-practices will be demonstrated including testimony from an experienced undergraduate student.

Keywords: R, statistical computing, reproducible research

Development of Healthcare diagnosis software: focusing on analysis of DNA microarray

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Microarray technology is an interdisciplinary technique that promises revolutionary progress in better health and improved quality of life. The paper focuses on the development of an efficient software package, equipped with already well-known methods, as well as newly proposed methods in this paper, that will allow processing and analysis of thousands of genes on microarray images. The microarray analysis software package (called SmartArray), newly proposed in this paper verifies dramatic changes in the mRNA, protein, and activity level in the rat retina during light deprivation, which have been demonstrated in previous biological experiments, through microarray analysis.

Keywords: microarray, snake algorithms, template alignment, segmentation

Finding Success Factors for the Successful Implementation of Game-Based Learning

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A substantial body of literature indicates that the use of non-traditional interventions, such as games and simulations, are valuable teaching methods. Especially, gaming is considered an effective, fun, and encouraging way of learning while providing immediate feedback and measurable process. Therefore, games in the classroom are not just played for fun but used as learning tools that can engage students' interest and immerse them in subject knowledge. Even though it has been reported that games are believed to render learning more learner-centered and more interesting, the impact of game-based learning in college classrooms is still questionable. This study provides insight into the successful implementation of game-based learning by sharing the lessons learned from a practice of game-based learning in undergraduate education. This study discusses the effectiveness of the use of digital games for student satisfaction and measurable academic improvement.

Keywords: Game-Based Learning, digital game, undergraduate education

Teaching Information Technology to Technology-Savvy Generation

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A discussion regarding the challenge in teaching information technology to this technology-savvy generation.

The Impact of H Bill 5 on High School and College Computing Course

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This presentation will discuss the impact of House Bill 5 on High School and College Computing Courses.