

INTRODUCTION

by Justin Solomon, *Managing Editor*

In this issue of *ACM Crossroads*, in addition to our interdisciplinary computer science content, we explore the generation and processing of images in depth from artistic, usability, and technical standpoints.

First, in his paper entitled, "Detecting Steganography on a Large Scale," William Ella from the University of Mary Washington presents his research into finding messages hidden in databases of images. Ella scanned thousands of images from Wikipedia to detect likely instances of steganography, in which messages are hidden in unnoticeable details of image colors, compression, and artifacts. Although Ella's results are mixed, the process he presents may become useful for future research into searching for hidden communication through "blind steganalysis."

Moving from the analysis of the most subtle aspects of computer imagery to that of more noticeable usability properties, Joonghoon Lee of the University of Maryland describes his work designing a viewer for open-source terrorism data in "Exploring Global Terrorism Data: A Web-Based Visualization of Temporal Data." After explaining the technical and design decisions that went into the creation of his viewer, Lee confirms the effectiveness of his work through a short user study. This type of careful attention to the needs of the end user represents sound software engineering practice and clearly resulted in a particularly effective tool for visualization.

Finally, we examine the artistic aspects of generating computer imagery through an interview with Ryan Bliss, creator of the popular desktop art website DigitalBlasphemy.com. In this interview, Ryan Bliss describes his transition from an English major to computer science to digital art and his outlook for the future of computer graphics. Those contemplating careers that combine computer science with other disciplines will be interested to read how Ryan synthesizes artistic and technical skills to produce his works, one of which is featured on the cover of this issue.

Outside of the area of computer imagery, Craig Thomas of the Computational Linguistics Laboratory at Queen's University investigates the usability of semantic formalisms, which express linguistic patterns for efficient communication between humans or with computers. By examining the aspects of other formalisms that make them hard to understand, Thomas proposes a new, simpler method that preserves accuracy while keeping the system approachable by nonlinguists.

The last article in this issue deals with a challenging problem for both undergraduate and graduate students in computer science: what is the most effective way to communicate concepts from computer science to students who have little programming experience? In this column, entitled "On Teaching Computer Science: Thoughts and Advice for TAs," by David Chiu of Ohio State University, the author offers concrete advice for teachers and teaching assistants based on his own experiences teaching computer science.

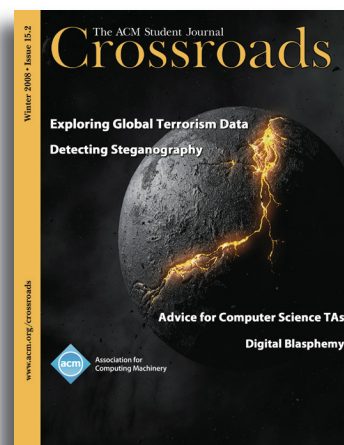
While the articles in this particular issue might be focused in image generation and processing, *Crossroads* continues to seek submissions across the spectrum of computer science research and development. As the school year moves on, if you are completing interesting computer-related work—whether it be part of a senior or PhD thesis, a science fair project, a homebrewed idea, or anything in between—definitely consider submitting your work to us. As usual, you can find submission information on our

website, at <http://www.acm.org/crossroads>, and feel free to email us at crossroads@acm.org with submission ideas or questions. Also on our website, check out listings of internships in computer science and ways in which you can get involved in the editing and authorship of *Crossroads*.

Best wishes for continued success as the school year progresses. We look forward to receiving more great content from you for future issues as we strive to explore your interests, concerns, and opinions as computer science students, professors, and enthusiasts worldwide.

Biography

Justin Solomon (justin.solomon@stanford.edu) is an undergraduate at Stanford University double majoring in computer science and mathematics. Along with his work as the managing editor for *ACM Crossroads*, he participates in computer graphics research in collaboration with the Stanford Department of Computer Science and Pixar Animation Studios, competes in programming contests, and plays cello and piano.



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