



Introduction

by [Justin Solomon](#), Managing Editor

In this issue of *ACM Crossroads*, we continue making *Crossroads* history in both format and content. As with the last issue, rather than focusing content on a particular subdiscipline of computer science, we present a variety of articles in such diverse fields as complexity theory and data visualization. Hopefully, whether you are an undergraduate, a graduate student, a professor, or simply an interested reader, this new format will bring content more relevant to your research and personal interests as an academic member of the ACM.

This issue contains two interviews with prominent computer scientists who were kind enough to share their wisdom exclusively with the *Crossroads* readership. We are especially excited to present an interview with Fran Allen, the 2006 winner of the Turing Award, an award commonly regarded as the Nobel Prize for computer science. Allen's accomplishment represents a lifetime of devoted work in computer science, and her contributions to fields such as programming languages and computer science pedagogy have had considerable effects on several key aspects of modern computing. Our second interview is with Anthony Volodkin, inventor of the new online service *Hype Machine*. By collecting and examining blog entries about music, *Hype Machine* shows promise for identifying future music hits as they gather interest in the blogosphere. Volodkin's work demonstrates the vast opportunity still available for those computer science students with entrepreneurial instincts and creative ideas for computerized services.

On the more technical side, contributor Gregory M. Zaverucha demonstrates that some computer games are hard in the most mathematical sense of the word. In his article entitled "On the Complexity of Katamari Damacy," Zaverucha formalizes certain aspects of the popular Namco game Katamari Damacy. In doing so, he is able to prove that Katamari Damacy is NP-hard. That is, it is unlikely that a programmer could write

an efficient method for solving an arbitrary puzzle from Katamari Damacy.

Combining the mathematical aspects of generating flow fields with the more human aspects of data visualization, Amit Sawant and Christopher Healey present a new method for visualizing flows in their article entitled "Visualizing Flow Data Using Assorted Glyphs." By using simple glyphs to represent motion involved in simulations of collapsing supernovae, Sawant and Healey are able to generate understandable visualizations from previously daunting data sets. While the application they discuss is in the field of computational physics, an effective flow visualization method could have far-reaching implications, as flow fields regularly arise in computer graphics, vision, and other areas of research.

Sergio Sayago and his colleagues at Pompeu Fabra University and the University of Barcelona in Spain explore the more human aspects of computing in their article, "Meeting Educational Needs of the Elderly in ICT: Two Exploratory Case Studies." While today's students have grown up with near constant exposure to computer technology, oftentimes the elderly are unable to enjoy the latest benefits of information and communication technologies (ICT) because they find them daunting or difficult to use. For this reason, the article considers several of the unique aspects of educating older audiences about computer use, describing various case studies and experiences in designing appropriate instructional methods and systems.

The *Crossroads* staff can continue to improve the format and contents of the magazine only as long as our readership continues to submit such interesting articles. Since we have broadened the scope of the articles we publish in each issue, we are seeking a variety of both technical and non-technical articles for publication in future issues. Have you designed a system that takes advantage of internet technologies or other tools about which you could share your experiences? Have you completed a research project in computer science? Had an interesting internship or work experience? Invented an algorithm? If so, *Crossroads* would be honored to consider your work for publication. As usual, details about submission can be found on our website <http://www.acm.org/crossroads/> or later in this issue. We welcome contributions from authors at the high school, college, graduate, or above levels and are pleased to answer any questions you might have about the article submission and publication processes at crossroads@acm.org.

In the meantime, best of luck for the continuing school year. May your programming

assignments, research projects, websites, and other development endeavors work without a bug.

Biography

Justin Solomon 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 the Stanford Department of Computer Science, competes on a team for the ACM programming contests, and plays cello and piano.