

Computing for Social Good

A Course Provides Real-World Experience and Connections to Local Nonprofits

BY Christine Cesaria

When a local domestic violence organization needed a new way to reach teens in potentially abusive relationships, and a crisis intervention hotline wanted to optimize call response, they found willing partners in a unique undergraduate class at Stony Brook University. CSE/ISE 391 Benevolent Computing, offered by the Department of Computer Science within the College of Engineering and Applied Sciences, explores the phenomenon of software applications that leverage social and interactive technology and mobile computing to effect positive social outcomes. Appealing to the civic-minded undergraduate has worked well for the longevity of this computer science elective, which has attracted close to 200 students who have completed over 50 technology projects for nonprofit clients in five years.

Computer science faculty member Tony Scarlatos teaches Benevolent Computing in the department's Multimedia Lab, which he directs. "Benevolent Computing is the synthesis of our technology, skills and aspirations for a better world," he said. "Student learning is hands-on, extends beyond the classroom, and impacts diverse communities in need across our region. Course offerings in computing for social good are rare, and our computer science course is the only one I know of at the undergraduate level."

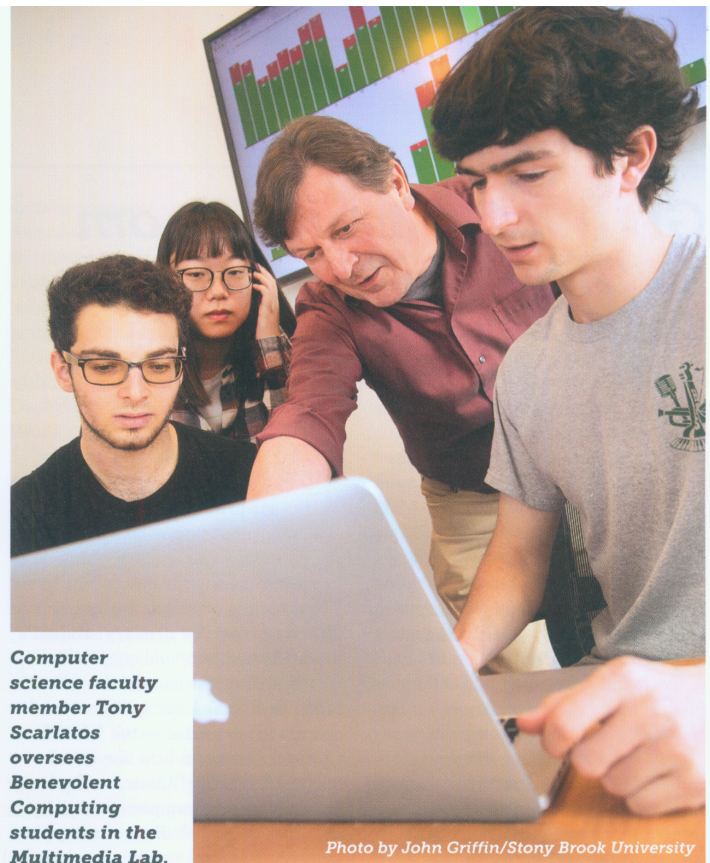
Students don't realize the amount of real-world experience they will gain. Computing for social good has an engaging ring to it, but as Yalkin Demirkaya '17, an information systems major, said, "I didn't know what I was getting into. I took the class because it sounded interesting, but I was shocked to learn that the learning experience went beyond typical course work

and we were helping actual organizations in need."

The range of clients includes Long Island's top social service and relief providers, and the complexity of projects varies. The spring 2017 class of undergraduates created tech solutions related to user interface, website design, mobile applications, data storage and management, workflow and gamification. Among their clients were Island Harvest, L.I. Against Domestic Violence (LIADV), Sunshine Prevention Center, EAC Network, and Response of Suffolk County.

Response is a returning client for Scarlatos' students. In 2017, three students built a software system that uses visualization to optimize Response's ability to answer crisis intervention hotline calls and streamline operator staffing. Robert Barsky, a crisis counselor at Response, said the relationship works so well not only because services are provided at no cost and the students are "energizing," but also because the result allows them to serve more people in need.

The Sunshine Prevention Center in Port Jefferson Station, which offers an alternative education and prevention center for people facing personal or familial challenges, reaped the benefit of the work of 11 Stony Brook students this past spring. Carol Carter, Sunshine's executive director, said she was impressed by the computer science undergraduates and the ideas they brought to the table. Not only did they create a new website for the agency that includes an online store, but they also enabled children served by the center to build relationships with Sunshine staff through interactive online gaming activities that were formerly offered only as hard-copy booklets. The whole



Computer science faculty member Tony Scarlatos oversees Benevolent Computing students in the Multimedia Lab.

Photo by John Griffin/Stony Brook University

experience has made her "hopeful for the future," she said.

According to Scarlatos, ideas begin with students visiting the client's office and preparing a design brief that details who will use the final product and the current organizational challenges.

"The course synthesizes the department's offerings in software engineering, human computer interaction and ethics, while providing a practical focus," Scarlatos said. He has witnessed many successful projects, some of which were initiated by the students themselves, with several of them moving on to a second phase as an independent research assignment. Most memorable for him was Shelterware, a mobile app that helped the Smithtown Animal Shelter modernize its services and better match pets with families using a paperless system.

As Stony Brook's juniors and seniors use creativity to help people in need, they're also building unique relationships armed with foundational course work to fuel their creativity. Sunshine, Response and LIADV have never worked with any other institutions in this capacity. In most cases, students form a bond with their clients and many agree to provide pro bono assistance after the semester ends.

LIADV's project hit particularly close to home for the students

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since the end user is near their age. For LIADV, a team of three students created an interactive game to help high school teenagers recognize when they are immersed in a violent relationship. LIADV educators Charlene D. Rogers and Tara Davidson said they found the Stony Brook students to be open to coaching and innovative throughout the 10-week project that enhanced communication among the teenagers the organization serves.

When calculating the impact of Benevolent Computing on both the students and the outside community, a complicated formula need not be used. You need only to hear the enthusiasm in the students' voices as they describe their projects and the appreciation expressed by their clients. Perhaps the educators from LIADV said it best: "Our relationship with Stony Brook is a win-win situation and fantastic way to bring ideas to life."