

watch out

DIGITAL CRIMINALS BEWARE OF DC

Thanks to the digital forensics major, Defiance College graduates can fight criminals in a whole new way

by Dawn Comer

Kerstyn Clover, a sophomore from Jonesboro, Ill., admits her journey to becoming a Digital Forensic Science major at Defiance College was peculiar. “I was a few months away from applying to fine arts schools to work in the culinary arts field,” says Clover. “I thought I wanted to be in Food Network challenges and develop new pastries and sugar designs. Once it hit me

that I didn’t want to have to work under other chefs for my first decade or so, I had to start looking for other ideas.”

Like Clover, students in Digital Forensic Science (formerly Computer Forensics) do not give cookie-cutter responses. Instead, they tell a range of stories rich with unique paths and motivations. Under the leadership of Dr. Gregg Gunsch, Professor of Digital Forensic Science, renowned not only for his brilliance in digital forensics and

personal interest in students, but also for his motorcycle, his annual Super Bowl party, and his Nerf gun (“Actually,” says Clairice Shook, a sophomore from Smithville, Ohio, “he has several Nerf guns”) which he keeps handy for sleeping students, individuality and out-of-the-box thinking are a strength. Even so, students speak in unison about their program as both a leader and model with its emphasis on integrated learning, service, internships, and professional certification



Dr. Gregg Gunsch and digital forensic science student Ilana Goch in the HOloDEC lab.

both as an IT technician and in digital forensics.

But back to Clover whose world, fortunately, did not begin and end with pastries. A childhood spent “reading Sherlock Holmes and watching law-enforcement and investigation shows” helped her discover her niche through “a career magazine that a friend gave me simply because Warrick from CSI was on it.” Then she discovered Defiance College and its Digital Forensic Science program which, she says, was “one of the first of its kind.”

While Clover was nearly swayed by temptations of a pastry chef life, sophomore Ilana Goch from Canton, Ohio, “always had an interest in forensics and how investigators can find little details.”

With a computer programmer for a father, the Defiance program might in retrospect have seemed a perfect first choice, but Goch actually began in “clinical laboratory science at another school.” When she realized Digital Forensic Science was the better fit, finding a “program that would prepare students for the actual field” was a priority. Once she discovered Defiance, she transferred “within a week.”

Preparing students for the field is as much a priority to Gunsch as it was to Goch. Describing how the Digital Forensic Science program differs from computer science and engineering programs, Gunsch says that those tend to be more abstract and “intentionally theoretical” in a way Defiance’s program is not. Because pure computer engineering is “aimed at advancing technology itself,” an “emphasis on marrying that to the day-to-day application of the technology doesn’t exist, or is not emphasized. What we are doing here at Defiance is both education in its pure sense and training. It’s neither better nor worse; it’s appropriate for our demographic and our goals.” Students at Defiance, says Gunsch, “learn the foundations, learn why it works, not just the tools.”

Raymond Luo, a junior and self-described “computer geek” from Qingdao, China, was just fifteen when Defiance College representatives came to his high school. Luo, who had considered a career as an electrical engineer, began looking into the Digital Forensic Science program and “decided it was something completely new, very technological, and something I could do.” Having transitioned from life in big city Qingdao to small town Defiance, he “quickly

learned that small school equals more interaction with professors” and is grateful for the small school environment and, by extension, the integrated learning approach which is key to the program’s success and a hallmark of Defiance College.

“We’re small, and we have a flat hierarchy,” says Gunsch. “I don’t observe

“And the purpose for knowing all this, for drawing from both disciplines [digital forensics and criminal justice] is to keep us from messing up the evidence.”

-- Raymond Luo,
DC Digital Forensic Student

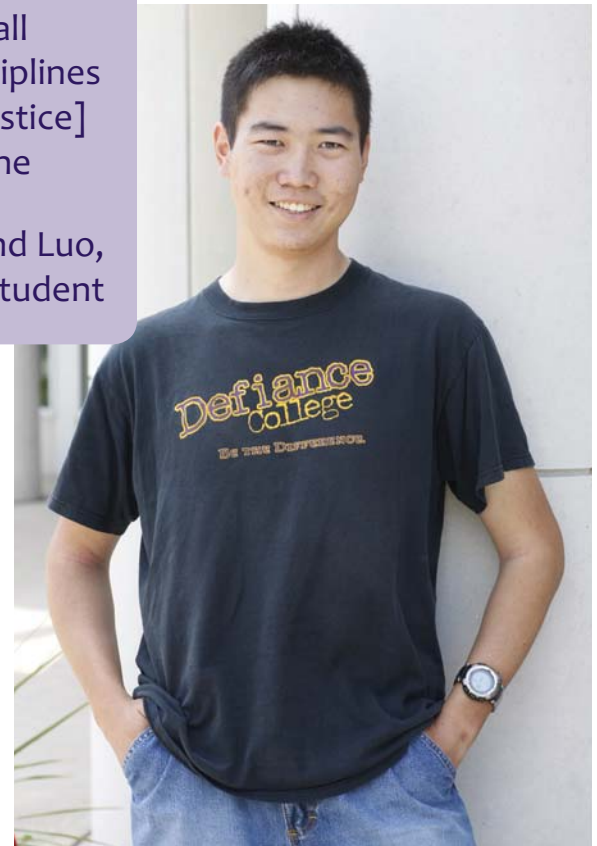
interdepartmental fighting. I don’t observe turf wars. We’re a tight-knit school, we’re family. It’s easy to do things interdisciplinary.” Gunsch, who has seen Digital Forensic Science programs fail to get off the ground at other schools because of interdepartmental squabbling and “entrenched bureaucracy,” adds, “Our students take five courses in Criminal Justice.”

Luo, speaking of the overlap between criminal justice and digital forensics, says, “The aspects of criminal justice are going to help us in the job later. The computer work is more technical, but criminal justice gives us the concepts, the laws we need to follow, like chain of custody to make sure that evidence is preserved properly.” And the purpose for knowing all this, for drawing from both disciplines, says Luo, is “to keep us from messing up the evidence.”

In addition to the connection between Digital Forensic Science and Criminal Justice, says Gunsch, “We’ve opened up the requirements for a minor in Psychology to more flexibly be able to apply psychology principles. Kerstyn Clover is piloting that program.” It also helps, adds Gunsch, to be in a place where the “culture of the college is focused on engaged learning and service.”

This emphasis can be seen in the Digital Forensic Science program’s work with the Family Justice Center of Northwest Ohio, local law enforcement, and the broader community. Following flooding in Findlay, Gunsch’s program volunteered to recover data from flooded computers. One Findlay

resident handed over his computer with a crashed hard drive to Gunsch who “turned it into a crime investigation,” wrapping crime scene tape around the computer and treating it as a “case.” His students followed proper protocols and were able to retrieve data including iTunes content and family photos for the individual who would later send a thank you and buy pizza for the class.



Raymond Luo

When Ilana Goch says of Gunsch, “he brings in real life situations to help students grasp different concepts and create an interest and passion for the students as well,” this is what she means.

Sometimes helping the community furthers discussion and research in the classroom. When a nursing student turned over an old digital camera, “We were able to recover some pictures by hand that our commercial tools couldn’t completely recover by deep carving, carving out the files from the card.” This gave Gunsch and his students an opportunity to “look at the tools and why the tools couldn’t do it,” and to consider the tools’ limitations. As for the nursing student, she also got what she wanted. “One of her family’s pet cats had died,” says Gunsch, “and the only pictures were on that camera.”

Interested in doing more of this sort of work to “help the community,” Raymond Luo worked to help establish a High Technology

A Unique Opportunity

An exciting aspect of the digital forensic science program is the ample opportunity for hands-on experience, both in the laboratory and in the community.

During senior-year internships, our students have worked on actual cases ranging from drug dealing to child pornography. In the lab, they have recovered data from crashed hard drives and sanitized a computer that was suspected of being used to electronically stalk a young woman.

The digital forensic science program at Defiance College is also distinctive nationally in that it builds upon the strength of our long-standing Criminal Justice program, giving our students a solid background in the legal aspects of evidence collection and investigative procedures.

Crime Investigation Association (HTCIA) chapter, an interdisciplinary organization involving Digital Forensic Science, Forensics, and Criminal Justice. In addition to “fixing computers for the community,” which, says Luo, “helps us learn for ourselves,” the HTCIA is also involved in the Internet Safety for Children campaign.

Digital Forensic Science students graduate prepared for the competitive marketplace. Program graduate Ryan Gladieux’s prediction that “occupational options would be great upon graduation,” proved true. “Before graduating from Defiance College,” Gladieux says, “I was hired by a federal contracting company as a Computer Forensic Examiner that had a current contract with the Department of Justice. After about nine months of working for the federal contractor, I was hired as a federal employee by the Department of Justice as a Forensic IT Specialist, which is where I have been for a year now. With the Computer Forensic field being quite new to the community, the simple fact of having a Bachelor Degree and the National Accredited Certification (GCFA) has helped me succeed.”

Other program graduates can be found working for the Drug Enforcement Administration, in the Ohio Attorney General’s Bureau of Crime Investigation, and at Vestige, a Cleveland-based computer forensics company that asserts,

“We Turn Digital Evidence into Intelligence.” While Gunsch acknowledges that not even the digital forensics field is recession proof, “crimes don’t go away” and employment opportunities are steady.

For Gunsch’s current students, the future is full of possibilities. “I have the choice of staying here and going into law enforcement if I become a citizen,” says Luo, “or earning a graduate degree and then going back to China where there are more jobs.” Whatever path Luo takes, “the ethics of the career” and “trying to defend something,” are important to him. “I want to be a protector,” says Luo.

Ilana Goch “would be happy getting a job with the government or any private company that will need what I have to offer,” while Clairice Shook, for whom, “Professor Gunsch really is the main reason I chose DC, would love to be able to work for the FBI some day, helping to combat crime. I am something of an idealist, and would like to see bad guys off the street.”

And Kerstyn Clover, who once dreamed of being on the Food Network? “I really have my heart set on doing some sort of government work. I know that I’m going to need to be able to see who my work is helping as opposed to being holed up in a laboratory or working to help secure a business. Also, let’s face it. Who doesn’t want to be the stereotypical FBI agent in the slick black suit, kicking down doors and hauling criminals into court?” ♦



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