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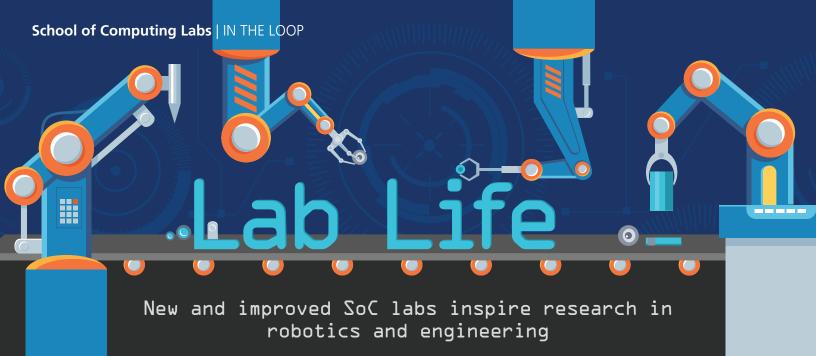# IN THE LOOP

A publication for College of Computing and Digital Media alumni

Assistant Professor Isuru Godage watches student Greg Mendez-Weeks work on a robotics project. See page 2.

Spring 2019

Lab Life

New and improved SoC labs inspire research in robotics and engineering

Picture a lab. If you think of white-coated, goggle-wearing scientists holding beakers and peering into petri dishes, think again. The 19 research labs in the College of Computing and Digital Media (CDM) feature high-end computers, cutting-edge technology and collaborative work stations. Computer science PhD student Diego Castro, who spends many hours in the Robotics and Medical Engineering (RoME) Lab working on his dissertation research, says lab access has been indispensable to his work. "Without this lab, I wouldn't be studying at DePaul," he asserts.

Peek into two newer labs—RoME and the Cyber-Physical Systems Engineering Project Lab—below.

University, Vanderbilt University, Clemson University, the University of Tokyo and other institutions of higher learning. One recent paper introduced an MRI-guided, minimally invasive robot designed to help aspirate blood clots safely.

Godage notes that robotics is a multifaceted, collaborative field that fits well with ongoing research in the School of Computing (SoC). The lab facilitates interactions across majors and is truly a home away from home for many students. "We are like a family who you can talk to, work with and rely on," Castro says. "It's great having a place to work on the things you love and learn at the same time."

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Robotics and Medical Engineering Lab

In the RoME Lab, students are manufacturing and experimenting with "soft" and "continuum" robots that have the potential to affect health care, disaster response and space exploration. Unlike traditional metal or plastic robots that are operated by motors, these robots are made of flexible materials and use pneumatics (air) and hydraulics (fluids such as water and oil) to generate motion. "The main goal of our research is to create robotic components that can be used safely with humans," explains Greg Mendez-Weeks, a game design major and undergraduate research assistant who has worked on the development of continuum robotic arms.

The lab, which is overseen by Assistant Professor Isuru Godage, opened in fall 2017 and has already established research partnerships with Cornell

Cyber-Physical Systems Engineering Project Lab

Last fall, CDM bid adieu to the Physical Computing Lab and said hello to the Cyber-Physical Systems Engineering Project Lab. The new name reflects recent changes at CDM, including the establishment of a BS in Cyber-Physical Systems Engineering (CPSE) in fall 2017 and the creation of the Idea Realization Lab, a dedicated makerspace. The rebranded lab, which opened in fall 2018, primarily supports students taking engineering classes.

"Engineering is a new direction for DePaul, and no existing lab space had the specialized tools, equipment, setup or software required for the training of engineers," says Godage, who is co-director of the lab. In CPSE courses, students gain familiarity with these methods and materials as they develop autonomous rovers, smart appliances, sensor networks and other

systems. Three new, state-of-the-art electronic benches feature a full array of capabilities and tools, including oscilloscopes, function generators and multimeters. "These will be used to test and analyze electronic circuitry," Godage says. "Students working in this field need to be proficient at using these tools."

The CPSE program is based on "firm theoretical foundations and fundamental engineering design principles," says Professor Ljubomir Perkovic,

co-director of the lab, who adds that engineering students complete rigorous math and science requirements. But hands-on experiences are critical to help students translate theory into practice. Most of the CPSE courses feature a weekly lab component.

"This lab is the space where the first few generations of DePaul engineers will gain their engineering mastery and experience," says Perkovic.

Jiahao Deng (left) controls an industrial robot while Diego (top right) controls a human-friendly soft robot. Sadaf Ebrahimi (top left) interacts with and telemanipulates these robots in a physics-enabled virtual environment while Ali Nazari (bottom right) monitors the system.

The RoME Lab allows students to experiment with soft and continuum robots.

Godage and Assistant Professor Sharief Oteafy discuss a problem at the whiteboard.

A FESTIVAL TO REMEMBER

Students thrive in film festival environments

I t's no surprise that celebrities receive the red carpet treatment at film festivals from Cannes to Sundance. But the School of Cinematic Arts (SCA) students who attend or work at film festivals know you don't need to be a movie star to reap the benefits of these events. In fact, experiencing a festival as a student is one of the best ways to learn, network and gain an insider's knowledge of the industry.

Champs-Élysées Film Festival
The new Film in Paris program, established last year, gives a handful of students an opportunity to live in the French capital with host families, take classes at the Alliance Française and intern with the Champs-Élysées Film Festival in June. "With two-thirds of film/box office revenues coming from international territories, it's a great way for students to learn about the industry beyond Hollywood," says Assistant Professor Timothy Peternel.

Brad Sommer, a senior majoring in film production, has spent time abroad on both volunteer and film programs, but none of his prior experiences compared to this one. "Those three months completely changed my life," he says. Learning to navigate the internship despite not speaking French proved invaluable to Sommer's sense of self-confidence. "The fact that I was not only able to survive, but also thrive and prosper, is something that I'll take with me wherever I go, in whatever I do."

To succeed in this internship, students must be adaptable, eager learners, as well as self-starters. Each day brings different challenges and opportunities. In the weeks leading up to the film festival, students tackle prep work, such as assembling welcome packages, researching filmmakers and delivering posters around the city. Then, once the festival begins, students work up to 16 hours a day helping to make sure everything runs smoothly.

Students from the Film in Paris program enjoy their film festival experience.

"I loved being in the hustle and bustle of the festival," says Emily Broderick, a senior majoring in film and television. She participated in the program with Sommer and two other students last spring. "There's a lot of pressure and it's so fast-paced, but that's where I thrive. I had the most amazing time running around, completing tasks and being part of the team that made it all possible."

Broderick hopes to make movies one day, but in the meantime, she took on an internship with the Chicago International Children's Film Festival because she enjoyed her Paris experience so much. "I'm exploring going into film festival work to build

"BEING SURROUNDED BY OTHER WRITERS AND FILMMAKERS REINFORCED THE EXCITEMENT AND PASSION THAT I HAVE FOR THIS WORK."

my connections with distributors and other independent filmmakers," she explains. "That way, I will have a strong platform when I start making independent films. I'll have a network that can help me and whom I can learn from."

Austin Film Festival
Fifteen SCA graduate students and five members of the faculty attended the Austin Film Festival (AFF) last October. "I call it 'Woodstock for screenwriters,'" Assistant Professor Scott Myers quips. "It's unique among film festivals because it highlights the work of screenwriters and television writers." The DePaul contingent joined more than 1,000 other attendees for four days of workshops, talks and events. While students were responsible for transportation, lodging and food, the college covered the costs of each attendee's producer's badge, which gave students access to a plethora of experiences and opportunities associated with the festival.

Leah Kunnath, an MFA in screenwriting student, had never been to a film festival before, but she found it incredibly affirming. "Being surrounded by other writers and filmmakers reinforced the excitement and passion that I have for this work," she says. "This job that we get to do is so cool, but sometimes, when you get stuck in the minutiae of everything, it's easy to forget that."

One of her favorite panels was "Writing the Second Act," a challenge for many screenwriters, Kunnath included. Since returning to DePaul, Kunnath has relied on the tips she learned from the writers on the panel. "As a writer, your responsibility is to labor over every single aspect of the script— leave no stone unturned and no aspect unaddressed," she says. "This kind of 360-degree focus is very hard to attain, but it's integral to great storytelling."

Other attendees left AFF with advice and encouragement from the five DePaul faculty members who presented "DIY: Making Short Films, Web Series and Micro-budget Movies." The panel was so popular that it was standing room only, and Myers says feedback from the audience was very positive. He adds, "It was also an excellent way to promote our school, university, students and faculty."

Another DePaul nod came from the outstanding showing of "Attachment," a script by Celia Blundo (CDM MFA '15) and Megan Binnie (CDM MFA '15) that made it to the semifinals of the AFF Screenplay and Teleplay Contest. The contest is considered one of the two most notable screenwriting competitions in the country. A semifinal result means "Attachment" was deemed in the top 2 percent of the record 10,500 scripts submitted in 2018.

"It's a testament to Celia's and Megan's talent, as well as the education they received at DePaul," Myers says. "It should encourage them to keep writing and growing as creatives."

STUDENTS AT SUNDANCE

In January, staff from SCA and DePaul's Division of Mission and Ministry attended the Windrider Forum at the Sundance Film Festival in Park City, Utah. The weeklong forum focuses on the intersections of theology, religion and filmmaking. DePaul is hoping to launch a new domestic study abroad program in collaboration with the Windrider Forum and Sundance in 2020.

Next Gen Data Scientists
Data Science Academy introduces high school students to the big world of data

"What is data science?"

At the start of CDM's first Data Science Academy in June 2018, only about one-third of the 13 high school students enrolled in the program thought they could answer that question. By the end of the week, 100 percent of the students felt they knew the answer.

This change was a direct result of the Data Science Academy's jam-packed syllabus, dedicated instructors and intellectually curious students. "So many disciplines fall under the field of data science, including statistics, algorithms and machine learning," says Professor Daniela Raicu, one of four DePaul faculty members who devised the program. "Our team was enthusiastic to translate our experiences to the high school level."

A total of 173 students from Chicago Public Schools (CPS) applied for 15 available slots, and 13 students completed the training. The juniors and seniors had all completed a computer science introductory course, as well as geometry and/or algebra; the majority of those accepted held GPAs of at least 3.5. One of the academy's major goals was to raise awareness among high school students of data science as a potential field of study and career option.

"There are limited opportunities for high school students to learn and understand this exciting field," the DePaul faculty members wrote in their recap report. "As a result, not many students consider pursuing data science as a major in college or as a career, which is contributing to the pipeline issue in meeting increasing demand for professionals in the field."

Additionally, women and people of color are not well-represented among those who are majoring in the field and entering the profession. This fact spurred the academy's creators to be intentional in accepting a diverse range of students. More than 50 percent of the attendees were female, 50 percent were Hispanic, 25 percent were African American, 17 percent were Asian, 17 percent were Caucasian and 8 percent were Native American (students could check more than one box).

"This initiative embodies DePaul's Grounded in Mission strategic vision by connecting an elite program at CDM with the diverse population of Chicago Public Schools," says Associate Dean and Associate Professor Lucia Dettori, who is also executive director of the Office of Computer Science at CPS. "[Students were] exposed to one of the hottest computing fields and experienced what it might be like for them to be DePaul students."

The curriculum incorporated hands-on learning, industry speakers and research presentations from DePaul students. Datasets from Divvy, the Chicago bike-sharing service, and music-streaming application Spotify helped students understand how data science is used in the "real world." Students explored the full data science cycle, starting with data cleaning, moving on to visualization and model building, and concluding with validation. As students discovered how data can be extracted and analyzed through computing techniques, they also honed their ability to think critically about data.

Survey results indicate that students were very pleased with the academy overall. "It was fascinating to see how graphs could tell a story about data," one student noted, while another said, "I loved learning new applications and ways to analyze and visualize data."

CPS students get a crash course in data science at the Data Science Academy.

The instructors—Dettori, Raicu, Associate Dean Raffaella Settimi-Woods and Professor Bamshad Mobasher—hope the participants continue to pay attention to the role of data in their lives as they conclude high school and, perhaps, decide to study data science in college.

"These students have been thrust into the middle of a technological revolution," Raicu says. "[It's a revolution] that promises to advance not only STEM disciplines, but also art, music, literature and social good, just to name a few."

A WELL-DESIGNED DESIGN COLLOQUIUM

Mini conference attracts students, faculty and the general public for a day of design talks

🐦 @kelly_mbishop

Thanks in large part to the efforts of Professional Lecturer Heather Quinn, DePaul was one of only four universities selected to host a prestigious Design Incubation Colloquium in 2018. The quarterly events are an initiative of New York City-based Design Incubation (DI), a five-year-old organization that provides opportunities for the communication design community to engage in academic and scholarly review of creative work.

"The idea was to bring research here and not just show off our own."

As coordinator, Quinn worked in tandem with DI to promote the Oct. 27 event. Students, professionals and faculty from across the country submitted presentation proposals, which were blind peer-reviewed by representatives from DI. More than 30 abstracts—the highest number DI has received for a colloquium—were winnowed down to 16 spots.

The final lineup of topics included comfort toys, created by the son of a woman with who suffered from epilepsy; embracing randomness in design, from a self-described control freak; and fat bias in graphic design, from an author and designer who created a typeface based on her body's proportions.

"There was a big focus on the power of design to create impact, as well as design's ability to help shape our worlds," Quinn notes.

Quinn wanted the one-day colloquium to feel like a mini conference with a welcoming, open vibe—a space where anyone from the creative community would be comfortable. "Our speakers were from both academia and industry, local and national," Quinn explains. "The idea was to bring research here and not just show off our own."
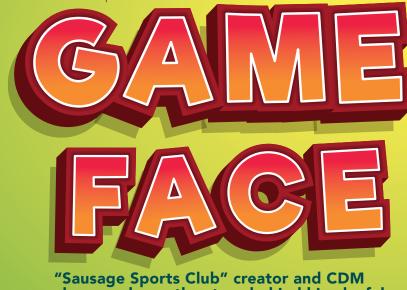
That said, CDM was still well-represented. Two graduate students, Abhinit Parelkar and Gerard Panganiban, shared the results of a prototype they created to help people ignore their phones so they can concentrate on completing a task, while Professional Lecturer LeAnne Wagner discussed wearable technology.

The colloquium also featured a keynote from Kelly Bishop, VP of product and design at the satirical publication The Onion, who spoke about finding balance among the head, heart and gut in storytelling.

"We were told that this was the biggest colloquium to date, so I would consider that a success," Quinn says. The event, which was also part of Chicago Design Week, attracted approximately 70 graduate students, faculty, alumni and members of the general public.

Quinn was pleased to see participants interacting before and after the talks, highlighting the interpersonal elements of design. "Social connection in the physical space is so important," Quinn says. An after-party at the Haddon Avenue Writing Institute brought together speakers and attendees for a final celebration of design.

GAME FACE

"Sausage Sports Club" creator and CDM alumnus shares the story behind his playful Nintendo Switch game

Computer game developer Chris Wade (CDM '15)

A billboard was partly responsible for getting Chris Wade (CDM '15) to DePaul. An avid gamer, Wade noticed posters on campus for "Octodad," the popular video game created by a group of DePaul students, when he visited as a high school student. "I thought it was interesting," Wade says. "At the time, it was not even on my radar to do game development."

Wade was still undecided on a major when he moved to Chicago from the suburbs of Cleveland. The greater appeal was the lure of a bigger city and the fact that friends from high school were heading to DePaul as well. But at orientation, the computer game development major caught his eye again.

Fast-forward eight years, and it's clear that this major was the right choice for Wade. In addition to being a developer and artist at Austin-based Owlchemy Labs, Wade is the creator of "Sausage Sports Club," a Nintendo Switch game that was released in July 2018 to nearly uniformly positive reviews.

Wade began working on "Sausage" at DePaul. As an officer of DeFRAG, CDM's student group for those interested in gaming, Wade attended a conference in California where a presentation on physics engines—the underlying tool set that determines how physics works in games—motivated him to start experimenting.

"In most games, you don't have much control over your character," Wade explains. "You're this box character who can't interact with the world that much. But in 'Sausage,' you can make your character's head flop around, so you have movement and jumping. You can even move your whole body like this crazy worm thing."

The four main characters in "Sausage" are huggable animals with elongated necks who bop across Sports Club Island, competing on a reality show to try to win athletic matches while striving to demonstrate sportsmanlike behavior. "They have personal problems with other characters in the world, like one might be mad that a friend is bragging about a poem he wrote that he won't share," Wade explains. "Your character has to convince him to share it by beating him in a sports match, which is the way they solve problems."

"Sausage" is lighthearted, zany and fun, but Wade worked for years to develop the game and make it commercially viable. He took on contract projects to stay afloat while he perfected "Sausage" at Indie City Co-op, a game developers' coworking space in Chicago.

When Wade felt that "Sausage" was finally ready for the masses, he approached Nintendo reps at a gaming convention. He believes that meeting the reps in person was a key step toward selling his product. "When I sent a follow-up email, they remembered me and knew I was serious about my game," Wade says.

Making connections in the industry has been vital for Wade, and he's grateful for DePaul's assistance in that regard. "The biggest thing that I took away from DePaul is that you build a cohort of fellow students doing good work, and you give each other feedback and lift each other up," he says. "That ultimately turns into your first professional network."

Indeed, another DePaul gaming student recommended Wade to Owlchemy. The company approached Wade after college, and then again in 2017. At that point, the timing was right, so Wade accepted the offer. "The kind of work they do aligns really well with the kind of work I like to do, which is physics games and funny games that are nonviolent, family-friendly and colorful," Wade says. "I'm learning a lot."

Outside of work, Wade is playing around with some new ideas—top-secret prototypes at the moment—and preparing an update for "Sausage." Look out for wobbly, bobbly cats to grace Sports Club Island soon. "Then I will be done with it," Wade says. "But long term, I'll continue to make games for myself, and if they succeed, I'll hopefully move on to even bigger games."

CONNECTED FROM AFAR

Graduate student Sierra Sellman makes the most of her online degree program

When Sierra Sellman decided to go back to school for a second graduate degree, she ventured beyond her home base of Virginia. DePaul's MS in data science curriculum looked challenging, interesting and robust—plus, it was offered as an online degree program. Even better, the program fully mimics the classroom experience.

"Other programs I researched have a separate curriculum for online students and consist primarily of prerecorded material," Sellman explains. "DePaul's online format replicates the classroom experience. It's beneficial to hear the questions and comments from the students and their interactions with the professor."

Sellman is a full-time student who received a competitive National Geospatial-Intelligence Agency (NGA) scholarship to support her studies. After she graduates this year, Sellman will return to her position as a data scientist with the NGA, the primary source of geospatial intelligence for the Department of Defense and the U.S. intelligence community.

While Sellman has worn many hats in her career—analyst, developer, project manager, technologist—she considers herself, first and foremost, a multidisciplinary problem solver. Those skills proved especially valuable for the group projects she undertook as part of her DePaul coursework.

"Before starting the program, I was dreading the logistics of working with other remote and in-class students on group projects, but they have been a highlight," Sellman says. "I have met many talented classmates. Also, I can choose a topic that resonates with my interests, and executing the final project helps consolidate the course material around a real-life problem."

Thanks to university software and free online apps, Sellman feels connected even though she is 700 miles away. Sitting in her home office outfitted with large monitors, wearing comfy clothes and holding a hot cup of coffee, it's almost like Sellman is on campus. But when her two children get home from daycare, she can take a break, eat dinner with them and tuck her kids into bed. Then it's back to studying late into the night.

"EVERY COURSE I HAVE TAKEN IS DIRECTLY APPLICABLE TO MY JOB."

Sellman is eager to share what she has learned at DePaul with her NGA colleagues. "Every course I have taken is directly applicable to my job," Sellman asserts. She adds that predictive analytics and data science are key growth areas for the organization.

"My plan is to leverage my degree to provide technical and data expertise within the government and to expand into the business side of plans, budgets and programs to influence how technical systems are built, facilitate integration and inform broader architectural designs," Sellman says. "I'm excited to apply what I have learned at DePaul to help my agency and create new opportunities for my career."

Support talented and motivated students like Sierra Sellman by making a gift to one of the funds below.

SUPPORT DePAUL UNIVERSITY

College of Computing and Digital Media
Support leading scholars, campus facilities and resources, and scholarships for students in the College of Computing and Digital Media.

General Scholarship Fund
Continue DePaul's commitment to being accessible to all students by helping fund need-based scholarships.

Fund for DePaul
Make an immediate impact through an unrestricted gift applied to DePaul's areas of greatest need, ranging from scholarships to programs.

Visit *give.depaul.edu/intheloop* to make your gift now.

SUPPORT FOR STUDENTS OF COLOR

The new CDM Students of Color organization is a preprofessional student group focused on providing students of color in the college with a supportive community, resources and leadership development opportunities. Noting that the tech industry emphasizes diversity and inclusion but employs only a small percentage of people of color, the organization offers networking events, job-related workshops and community gatherings to help prepare students to become leaders in their fields.

GRANTS ROUNDUP

Faculty continue to receive prestigious grants for their research. Recent awards include the following:

- The National Science Foundation awarded a $300,000 grant to Professor Daniela Raicu and Associate Professor Enid Montague (top left and right) for a research project on data science, human-computer interaction and health care.

- Assistant Professor Sheena Erete (bottom left) received $16,000 from the Pritzker Pucker Family Foundation for her project "Triangulated Data Analysis of Violence Prevention Mobile Application."

- The National Security Agency granted Assistant Professor Filipo Sharevski (bottom right) a subaward of $16,056 from Purdue University for information security research education.

HALF COURT HOOPS

In December, CDM hosted a DePaul basketball game with a special halftime show. Many attendees were amazed to see a video of Dean David Miller sinking a basket from half court. The secret? Green-screen technology and skilled SCA film students.

CALIFORNIA CONNECTIONS

On Oct. 4, alumni from SCA and The Theatre School gathered at Sunset Gower Studios in Los Angeles to network across the film and theatre industries. David Miller, dean of CDM, and John Culbert, dean of The Theatre School, shared university, program and college updates with nearly 130 attendees.

UPE SCHOLARSHIP ACHIEVEMENTS

Upsilon Pi Epsilon (UPE), the international honor society for the computing and information dsciplines, awarded 2018 scholarships to two SoC students. Craig Michael Bruenger (CDM '18) received the UPE Scholar of the Year award, while Leonore Leif Kaufmann (CSH '16, CDM MS '18) received a UPE Executive Council Award.

BRAVO! BRAVO!

- The School of Cinematic Arts was ranked 13th on The Hollywood Reporter's list of the Top 25 American Film Schools.

- "Esta Es Tu Cuba," a narrative short written by Assistant Professor Daniel Klein, won a bronze medal at the Student Academy Awards and a College Television Award for Drama from the Television Academy Foundation.

- Cartoon Brew selected Associate Professor Devin Bell's "Burnt" as its Short Pick of the Day for July 28, 2018.

- Instructor James Choi, Associate Professor Shayna Connelly and Alex Thompson (CDM MFA '17) were named to Newcity Film's 2018 list of 50 Chicago Screen Gems.

- Landing Zine, a zine about fear of flying by Valeriya Shur (CDM '18), was selected for the Otis 100% Festival of art and design.

- Tim Gamble (CDM '18), a student in the BS/MS computer science program and a lead data engineer at Enodo, was named one of Chicago Inno's 25 Rising Entrepreneurs and Technologists Under the Age of 25.

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Introducing our new alumni blog—the Blue Demon Line! Join us at the Blue Demon Line for an exclusive look into all things DePaul alumni, including in-depth interviews, "DePaul family" recipes, photo contests, tips and tricks from experts, and more!

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