

Computer Studies Department
NEWSLETTER



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THE HOME STRETCH!

December marks the home stretch of the fall 2020 semester. In addition to the holidays, it's time to register for the spring semester. The CS faculty have been very busy to ensure that the remote learning experience is as good, if not better than what we have come to expect of on-campus face-to-face classes. The department wishes to extend to you and your family best wishes for the holidays and a happy and healthy new year.

Did You Know?

Free has been mentioned previously as one of the most powerful words in the English language. In last month's issue, you were asked to name one thing in life that is truly free.

If you said water, you'd be wrong since it needs to be cleaned for human consumption. Rainwater is free but is undependable. However, the air we breathe is free. No one can stop it or charge for it.

Another thing that is free is a Certificate of Proficiency in Information Technology from OCC. If you are working toward an A.S. or A.A.S. degree and have completed core courses in any of the CS degree programs, you can apply for and receive it — for free. Contact your advisor or Dr. Cohen for more details.

Your Career

Whether you're planning to go on to a four-year school or join the workforce, your resume is your passport to the future. Remember the following:

A recruiter or hiring manager will read your resume top to bottom. You'll want the most relevant parts to be at the top and less relevant ones toward the bottom. When you have lots of experience, it's fine to go beyond one page. Just make sure that everything most relevant is still on the first page.

Also, check out the [Career Information Research Guide](#).

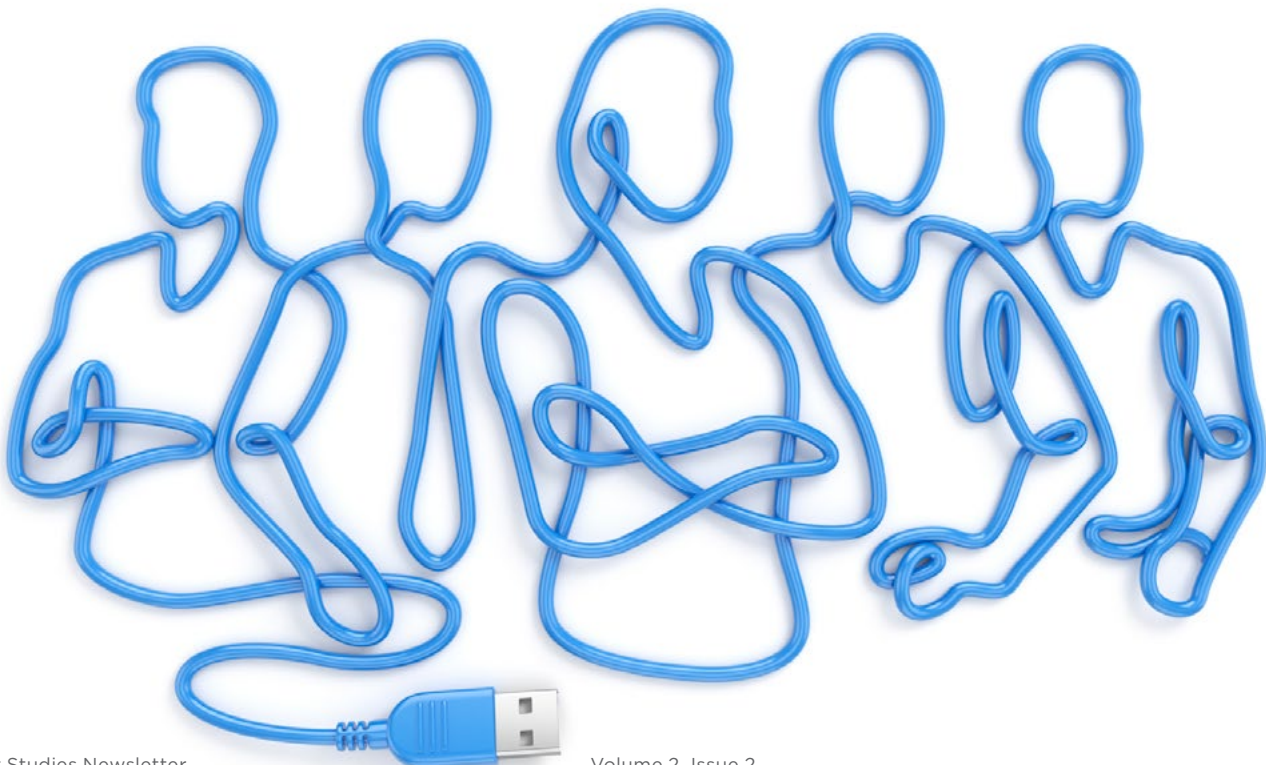
When you're a new grad or bootcamp grad, hiring managers usually care about experience in this order:

1. Real-world experience, if you have any, including internships.
2. Contribution to real-world projects: e.g., open-source projects.
3. Details about your education.
4. Projects that stand out for one reason or another. Something that goes beyond the proverbial "Hello, world."
5. Tutoring and leadership positions you have held in student groups.

Students can take advantage of our Career Services Program on campus. It begins by emailing Christopher Carbone (ccarbone@ocean.edu).

Services include:

- One-on-One Resume and Cover Letter Writing
- Career Counseling
- Industry Insight
- Internships and Employment Opportunities
- Interviewing and Networking Strategies
- LinkedIn and Social Media Optimization
- Online Career Assessments
- Career Database



CS TIP LINE

**Hi Dr. Cohen,
Remote learning has worked fairly well, but there are times when things just go crazy. Is there anything I can do to improve it?
Thanks,
Cappuccino**

Dear Cappuccino,

A successful remote learning environment needs the right equipment — including a notebook or laptop and a Wi-Fi router or extender that is up to the task. Other tech tools can also be helpful.

One issue with online learning is the potential for network difficulties — especially when live video streaming is involved. The typical home wireless router might not cut it for your remote learning needs; you may need an upgrade to a better router.

If you've turned your bedroom or another far-flung room into your remote classroom space, you might get poor coverage or dropped signals. A good Wi-Fi extender will reduce dead zones.

An extender isn't the solution for everyone, however. In some cases, an Ethernet powerline adapter is a better fit. Powerline adapters have the advantage of being able to use the house wiring to bring the internet through walls, potentially further than an extender, and the adapter can be set up easily by plugging it into an outlet. The powerline adapter does require that your computer have an Ethernet port.

If you are using an older or lower-end laptop or desktop, you may want to consider supplementing your system with an external microphone — especially if class participation is important. External microphones that plug in through USB and offer omnidirectional sound pickup are available.

A good pair of noise-canceling headphones come in handy in a remote classroom and connect directly or wirelessly over Bluetooth. They're also handy when listening to music.

Lastly, it might be time to upgrade your computer. There are numerous options, but consider your intended use and budget before making your decision.

Cappuccino, you might want to also consider cutting back on the caffeine.

**Have an item you'd like to share or a question you need answered?
Contact Dr. Cohen at gcohen@ocean.edu.**



SPRING COURSES

Registration for the spring semester is here. Don't wait! Registration is like holiday shopping: waiting too long can result in being shut out of a course or not getting your favorite instructor.

The following courses are being offered:

CSIT123	Integrated Office Software
CSIT110	Intro to Computers
CSIT115	Intro Computer Game Development
CSIT144	UNIX
CSIT163	Intro to C++
CSIT165	Programming I
CSIT166	Programming II
CSIT168	Intro to Python Programming
CSIT173	Game Programming with OpenGL
CSIT176	Computer Organization
CSIT185	Networking I
CSIT186	Networking II
CSIT200	Information Security Fundamentals
CSIT212	Systems Analysis
CSIT213	Database Management
CSIT265	Data Structures and Analysis



CLUB NEWS

Makers Club

This is a group of self-motivated, technology-based DIYers or inventors getting together to be more creative and productive in a teamwork environment. Members utilize everyday objects or scrapped parts found in our daily lives to make useful things. There is no limit to what we can do. Imagination is our driving force, hands-on is our culture, and science and technology are our tools. Due to the pandemic, we cannot have group get-togethers, but we are planning to promote some projects such as Arduino control/robotics programming in a virtual environment. We welcome new members, and details will be announced on Ocean Connect soon. Contact Professor Hong for more information.

Computer Science Club

After an abbreviated start last spring, the Computer Science Club is looking to reboot in a remote setting by hosting various workshops and guest speakers.

On October 30th, Howard Israel shared his experiences as a Chief Information Security Officer (CISO) and security professional in the National Security Agency, Bell Labs, and the Financial and Pharmaceutical industries, across both North and Latin America. If you missed his presentation, you can view it [here](#).

On November 13th, Dr. Cheryl Cooper presented an overview of privacy and information liability, cybersecurity environment vulnerabilities, cyberattacks and counter cyber-measures, the effect of Covid-19 and remote learning, and a forward look at future cybersecurity challenges. She also talked about the gap in the number of women and minorities in STEM careers and how to get started in the field for those interested in pursuing a career in cybersecurity. If you missed her presentation, you can view it [here](#).



FROM THE FACULTY

From the Desk of Ken Michalek

Spring is an exciting time for OCC. This spring, two courses will be offered that build on current trends seen in the marketplace. As you may have noticed, Python recently overtook Java to become the No. 2 language based on the Industry Standard Tiobe Software Index. More information can be found at techrepublic.com. This spring, the CSIT department is offering a course on Python, CSIT-168 Introduction to Python Programming. This course will cover all the basics of the language and demonstrate Python's use in real-world applications such as web, database and machine learning applications. It is an exciting time, and this is an exciting course. You will not want to miss it.

Not a day goes by without reading about some type of security breach in the news where customer information is stolen, courtesy of hackers. OCC's CSIT department is proud to offer the newly revised CSIT-200 Information Security Fundamentals course. This course is based on the industry-recognized CompTIA Security+ certification and will teach the latest trends in the security arena. In this course, you will learn how to protect your network and applications, determine where you are most vulnerable to attack using the latest security tools in the marketplace, and how to handle these incidents when they occur. There is also a significant demand in the marketplace for cybersecurity engineers, so having this background will help you land the job of your dreams and start your career in one of the most exciting areas of computer science. All one has to do is look at the biggest hacks of 2020 to see how important a course like this is and why you should be concerned about security in your career. For more information, see this article on the biggest hacks of 2020 from [Zdnet.com](https://zdnet.com).

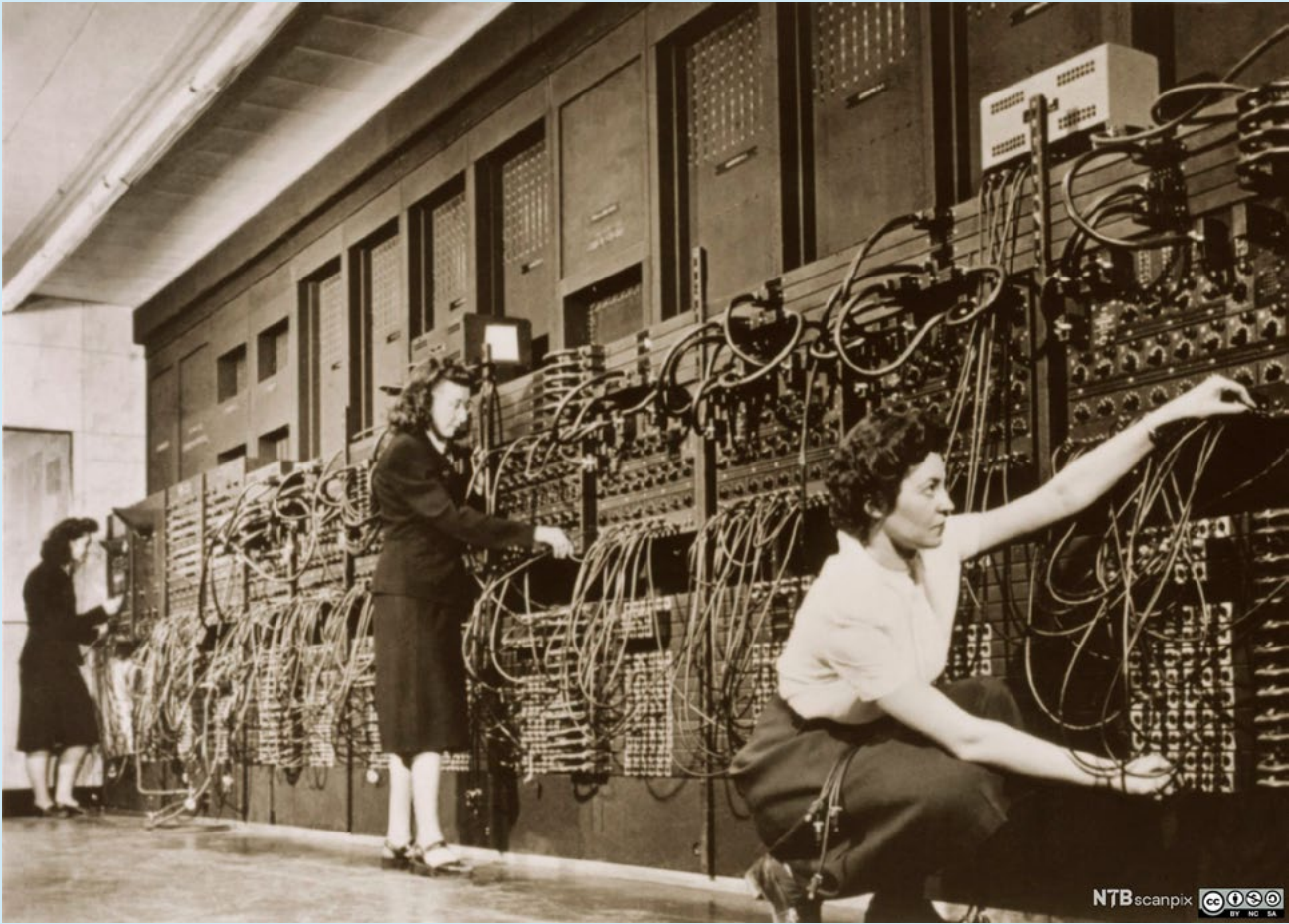
From the Desk of Jonathan Weiss

Covid-19 and remote learning have presented challenges and opportunities in a unique learning environment for CSIT 123 where desktop data analysis tools are being introduced. Some students are not able to run the key tool, Microsoft Access, on their desktop at home, so server-based exercises from Paradigm are being used to asynchronously teach, outside of live class time, the mechanics (or the "how") of using the tool and its features. Live WebEx classes are instead being spent to discuss the data analysis applications of MS Access (the "what") and the value they can bring (the "why").

Initial applications involved mining conclusions from 2010 Census data and anonymized class grades. But the most interesting result came when the students were asked, hypothetically, to define the data they might collect and use to propose assistance to the State of New Jersey in planning Covid-19 strategy and policy. The students were organized into break-out sessions where they were asked to define the data to be collected and the questions that would help the governor plan an approach to be used in managing the pandemic. The result was a comprehensive data model that incorporated knowledge and perspective across more than 50 students and four classes.

Some of the key tables (or entities) that were defined included Patient Information, Medical History, Test Results, Infection Incidents, Facilities (including homes, workplaces, etc.), Families, Geographies, Activities, Precautionary Measures, Policies and Compliance Histories. For each of these tables, data attributes were defined and relationships were established to allow analysis in support of various hypotheses and conclusions. Some of the more interesting data and relationships that students proposed for examination included the relationship between Politics and Policies and the potential effect on the patient's Compliance History, and Health Characteristics (including diet, exercise, access to healthcare and insurance) and their impact on the severity of symptoms.

In the end, the data model included more than 15 different entities, a network of relationships across them, and over 100 data attributes that the students would propose for collection to understand the merits and effectiveness of alternative Covid-19 policy. The students who participated in this exercise found it interesting and useful and believed it to be a valuable learning experience. They came to understand that even in cases where they are not the experts, having the knowledge on how to model, structure, collect and analyze data, while integrating the best ideas and knowledge across a broad team, is a valuable skill in itself.



ENIAC — Philadelphia's first computer
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Leverandør: NTB scanpix

During World War II, the Army's Ordnance Ballistic Research Laboratory approved the building of what experts now consider to be the world's first digital, general-purpose computer.

What distinguished ENIAC from the others was that a working machine performing thousands of calculations a second could be easily reprogrammed for different tasks. It was a breathtaking enterprise. The original cost estimate of \$150,000 would rise to \$400,000. Weighing in at 30 tons, the u-shaped construct filled a 1,500-square-foot room. Its 40 cabinets, each of them nine feet high, were packed with 18,000 vacuum tubes, 10,000 capacitors, 6,000 switches and 1,500 relays. Looking at the consoles, observers could see a tangle of patch cords that reminded them of a telephone exchange.

But by the time it was completed, the war was over. The machine did not boot up until November 1945, when 300 neon lights attached to accumulators lit up a basement room at the Moore School. Two 20-horsepower blowers exhaled cool air so that ENIAC wouldn't melt down.

On Feb. 14, 1946, the government released ENIAC from its shroud of secrecy. "A new machine that is expected to revolutionize the mathematics of engineering and change many of our industrial design methods was announced today by the War Department," began an Army press release. It described a "mathematical robot" working at "phenomenal" speed that "frees scientific thought from the drudgery of lengthy calculating work."