

ACSE 2019 - Session Descriptions

Track A - CS K-8

Session Title	Description	Speaker
Before Python: Coding in Elementary	Together we will explore through hand on activities how to foster computational thinking even with our youngest learners as we investigate how we can transition from no-tech coding activities to more sophisticated block coding experiences. Let's co-construct what a coding continuum could look like in elementary!	Tina Zita PDSB
Tinkercad: 3D Design / Circuits / Codeblocks	Autodesk's Tinkercad is a free, easy-to-use toolset for 3D CAD modelling, electronic circuit design and prototyping, and geometric coding. This workshop will introduce each of the three tools in the suite: 3D Design, Circuits and Codeblocks. Examples will be presented of these tools in use at the senior elementary level. We will also explore application at the junior elementary, as well as at the secondary level in TIJ, TEJ, TDJ, TCJ and ICS courses.	Gerry Corrigan TDSB
Off to the races with Sphero!	Join us for a fun session that combines coding with learning! In this session we will learn to code Sphero robots to race, code a matrix and create a compass to help look for buried treasure! This session is geared towards individuals with no previous coding experience or experience with Sphero. Sphero BOLT units will be provided, and some iPads will also be available. Please feel free to bring your own tablet with the app "Sphero EDU" installed prior to the session. Capacity 24 individuals (we will be working in pairs). Prepare to be engaged and stay on task, as we have a lot to cover in this short session! Looking forward to hunting for treasure! See you there!	Kristen Mogg Spectrum Education
Fun with Python, Microbits and Robots	This session will involve the exploration of classroom activities to try yourself. The session is excellent for middle school students (6-8) but they can easily be adapted to 3-5. The goal is to give you with hands on experience with the simple yet powerful tools of robots, micro:bit and Python.	Tim Cooper York School

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Track B - Cyber security and Ethics

Session Title	Description	Speaker
Computer Ethics: Values, Valences and Virtues	The converging themes of gender differentiation, engagement in cybertechnology, Computer Ethics and separated values within computer science suggest proven teaching strategies that promote enhanced learning engagement. These themes will be unified by anecdotal success strategies that show how emphasis on the ethics of cybertechnology engages both male and female students.	Douglas Henrich HDSB
Cybersecurity : A Case for Digital Literacy	Digital transformation is affecting everyone on a daily basis and we are just getting started: in 2020, there will be over 20 billion connected devices worldwide. This exponential growth of the internet powered tools also bring about exponential growth in cyber security threats. During this session, Philippe Landry, Cisco Networking Academy program manager for Canada, will demonstrate the importance of digital literature as a first line of defence against the looming boom of cyber threats.	Philippe Landry CISCO
Teaching CyberSecurity Through the CyberTitan Competition	Since reading various articles on the advances in cyber-warfare, I've been trying to think of ways of bringing cyber security into my classroom. This is no longer just about hacking; digital technologies have been weaponized. In 2017/18 I signed some volunteers in my computer tech class up for the CyberTitan cyber-security competition, an ICTC initiative that runs through the US Air Force Association's Cyberpatriot program in hopes of generating awareness and collecting current material I could use in my teaching practice; the results have been spectacular. This engaging and accessible real world ICT competition not only improves your students understanding of various operating systems and network infrastructure, but also manages to do it in an exciting and rewarding way. The digital world we live in is wilder than you imagine - come and learn how to introduce your students to a critical aspect of 21st Century technology and digital citizenship that no one is talking about.	Tim King CWDHS
What should we teach students about hacking?	This is going to be a very quick dive into the world of computer hacking: the bad guys, and the friendly hackers (like us). If you think of the internet as an organism, then we are the immune system; but in today's fast paced world the criminals have an edge. We will explore the major incidents and trends that shook our world in the last few years, the shadowy entities behind these global attacks, and the widening gap in the supply of professionals and basic cybersecurity literacy that leaves all of us vulnerable. Finally, we will demonstrate how easy it is to set up a rogue access point, and perform a DNS spoofing attack to trick someone into entering their credentials into a fake site. When it comes to cybersecurity we are all students. There's so much to learn, and it can be difficult to know where to begin. We at HackStudent want to make it easy.	Vitaly Volovich HackStudent

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Track C - Hands-on CS

Session Title	Description	Speaker
HTTP API Basics (1 of 2)	<p>A web service is a software function provided at a network address over the web.</p> <p>Examples include data storage services (Amazon AWS S3), weather services (Yahoo! Weather) and many others. These services are often accessed using an application programming interface (API) using the HTTP protocol. This hands-on workshop will review the fundamentals of the HTTP protocol and how it is used to access web services. You will learn how to format HTTP messages for the Adafruit IO web service, and simulate HTTP transactions with this service using Fiddler.</p> <p>Required Tools & Software: -Windows-based Laptop with WiFi connectivity -Fiddler Web API Debugging Tool https://www.telerik.com/download/fiddler</p>	Dennis Cecic cool-mcu.com
HTTP API Basics (2 of 2)	Part 2 of workshop	Dennis Cecic
Introduction to Python	<p>Python is currently among the most popular programming languages, and it is de facto the language of choice for most intro CS courses at Ontario universities.</p> <p>Join us for a crash course in Python. Learn how to teach the fundamentals: input, output, program flow.</p> <p>Comprehensive resources for teachers and students, including assignments, rubrics, example code, template code, solutions will be shared.</p> <p>To participate in this hands-on session you should bring a laptop and install 32-bit Python 2.7.X (preferred) or 32-bit Python 3.7.X prior to attending the session.</p>	Rado Grigorov YRDSB
Object Oriented Python and Pygame	<p>Object Oriented Programming is a challenging paradigm for students. Making objects come alive in a video game is the easiest way to convey even the most abstract OOP concepts, like inheritance.</p> <p>Join us for a crash course in OOP Python, delivered through video games. Learn the fundamentals of Pygame and write your own Tetris game, starting from a template.</p> <p>Comprehensive resources for teachers and students, including assignments, rubrics, example code, template code, solutions will be shared.</p>	Rado Grigorov YRDSB

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Track D - Computer Science Pedagogy

Session Title	Description	Speaker
Physical Computing Micro:bits and Python	Have you wanted to include a physical computing unit into your introductory Computer Science class? Using Python and the Micro:bit is a great environment for students to apply their existing Python skills to the world of electronics. We will explore the tools and techniques involved in bringing physical computing into the classroom. Every attendee will be provided a Micro:bit to work with during the session as we explore project ideas together.	Grant Hutchison TDSB
Using GitHub to Host Your Computing course materials	Github is not just a great place for students to store and submit work, it is also a great platform for you to host all your material for your courses. Github was designed to provide a place to not only store source code but also a lot of tools for discussing and collaborating on source code. This session will provide you with the basics of how to host material for your course, basics of using markdown, how to use your issue tracker for discussion board, as well as some best practicing for repo organization	Cathy Leung Seneca College
Lighting Talk Session 3 speakers and 3 discussions	<p>Spiralling the Curriculum</p> <p>The spiralled curriculum is an alternative to unit-based teaching. Rather than concentrating topics in a short period of time, spiralling interleaves multiple topics over a longer period. This should give students more time to learn any specific topic.</p> <p>Achieving Real-World Programming Literacy with Project-Based Learning</p> <p>A demo of how the Hatch Studio scaffolds literacy in real-world computer programming languages to successfully develop the five computer programming competencies: 1) Requirements-based programming, 2) Programmatic research, 3) Computational logic, 4) Computational thinking, 5) Syntax (using) and vocabulary (using and creating)</p> <p>Use Scratch to Teach Anything</p> <p>Scratch is an amazing powerful yet simple programming environment that lets you do simulations, games, stories or simple animations. it can also be used to demo math principles, model scientific phenomenon and make useful tools for teachers and kids</p>	<p>Ross Jamieson TDSB</p> <p>Peter Kuperman Emmanuelle Deaton Hatch Canada</p> <p>Tim Cooper York School</p>
Mistakes Novices Make: Tales from the CS1 Trenches	We teach over 2000 students in our Introduction to Programming (CS1) course each year at the University of Toronto. At that scale, some patterns emerge in the misconceptions new and nearly-new programmers bring to the classroom, and the common mistakes that they make. Big or small, these misunderstandings get in the way of their learning, and I will talk about how we aim to address them.	Jacqueline Smith University of Toronto