

## Roadmap of Suggested Sessions for K-12 Participants in SIGCSE TS 2022

### WEDNESDAY

(none)

### THURSDAY

## Session: Demo Session #1: Early Programming (Pre-College)

Thursday, March 3 / 10:00:00 - 10:45:00

**Demo #1A: CodeToon: A New Visual Programming Environment Using Comics for Teaching and Learning Programming in Exhibit Hall C/D**

Sangho Suh (University of Waterloo)

**Demo #1B: Run, Llama, Run: A Collaborative Physical and Online Coding Game for Children in Exhibit Hall C/D**

Stacey A. Koomneef (Ontario Tech University); Jeremy S. Bradbury (Ontario Tech University); Michael A. Miljanovic (University of Toronto)

**Demo #1C: Shared Virtual Worlds for Accessible Classroom Robotics in Exhibit Hall C/D**

Gordon Stein (Vanderbilt University); Ákos Lédeczi (Vanderbilt University)

## Panel: Should the AP Computer Science A Exam Switch to Using Python?

Thursday, March 3 / 10:45:00 - 12:00:00 in 555 A/B (STREAMING ROOM)

Mehran Sahami (Stanford University); Owen Astrachan (Duke University); Sandy Czajka (Riverside Brookfield High School); Adrienne Decker (University at Buffalo); Jennifer Rosato (College of St. Scholastica)

## Session: Data Science

Thursday, March 3 / 10:45:00 - 12:00:00

**Integrated Data Science for Secondary Schools: Design and Assessment of a Curriculum in Providence Ballroom I/IV (Omni)**

Emmanuel Schanzer (Bootstrap); Nancy Pfenning (University of Pittsburgh); Flannery Denny (Bootstrap); Sam Dooman (Brown University); Joe Gibbs Politz (University of California, San Diego); Benjamin S. Lerner (Northeastern University); Kathi Fisler (Brown University); Shriram Krishnamurthi (Brown University)

**How Computer Science and Statistics Instructors Approach Data Science Pedagogy Differently: Three Case Studies in Providence Ballroom I/IV (Omni)**

Sam Lau (UC San Diego); Deborah Nolan (UC Berkeley); Joseph Gonzalez (UC Berkeley); Philip Guo (UC San Diego)

**"That's What Science Is, All This Data:" Coding Data Visualizations in Middle School Science Classrooms in Providence Ballroom I/IV (Omni)**

Ari Krakowski (University of California, Berkeley); Eric Greenwald (University of California, Berkeley); Natalie Roman (University of California, Berkeley)

## Google Supporter Session: Getting More From Google: Engaging with Google's CS Education Programs

Thursday, March 3 / 13:45:00 - 15:00:00 in 551 A/B

## Session: IDEA: Accessibility

Thursday, March 3 / 13:45:00 - 15:00:00

**Achieving CSforAll: Preparing Special Education Pre-service Teachers to bring Computing to Students with Disabilities in Narragansett Ballroom A (Omni)**

Aman Yadav (Michigan State University); Maya Israel (University of Florida); Emily Bouck (Michigan State University); Alexis Cobo (University of Florida); John Samuels (Gainesville)

## Session: AI/ML

Thursday, March 3 / 13:45:00 - 15:00:00

**“A key to reducing inequities in like, AI, is by reducing inequities everywhere first”: Emerging Critical Consciousness in a Co-Constructed Secondary CS Classroom (CER Best Paper) in Narragansett Ballroom B (Omni)**

Jayne Everson (University of Washington); F. Megumi Kivuva (Bard College); Amy J. Ko (University of Washington)

## Demo Session #2: Data Structures and Algorithms

Thursday, March 3 / 15:00:00 - 15:45:00

### **Demo #2A: High School BRIDGES: Visualizations of Data, Data Structures, and More in Exhibit Hall C/D**

Kathryn Perry (Burnt Hills - Ballston Lake High School); Cedric Sirianni (Brown University); Owen Bechtel (Burnt Hills - Ballston Lake High School); Kalpathi Subramanian (University of North Carolina at Charlotte); Erik Saule (University of North Carolina at Charlotte)

### **Demo #2B: StoryQ: A Web-Based Machine Learning and Text Mining Tool for K-12 Students in Exhibit Hall C/D**

Jie Chao (Concord Consortium); Bill Finzer (Concord Consortium); Carolyn P. Rosé (Carnegie Mellon University); Shiyan Jiang (North Carolina State University); Michael Yoder (Carnegie Mellon University); James Fiocco (Carnegie Mellon University); Chas Murray (Carnegie Mellon University); Cansu Tatar (North Carolina State University); Kenia Wiedemann (Concord Consortium)

### **Demo #2C: Let's Learn Algorithms with AlgoTutorBot! An Entire Course as an Educational Escape Room in Exhibit Hall C/D**

Austin Cory Bart (University of Delaware)

## Lightning Talks Session #1

Thursday, March 3, 15:45:00 - 17:00:00 in 554 A/B

### **CoTinker - A Toolkit for Supporting Computational Thinking and Collaboration in High School Education**

Line Have Musaeus, Marianne Graves Petersen, Clemens Nylandsted Klokmose, Ole Sejer Iversen, Aarhus University

### **CSAwesome Java Curriculum**

Barbara Ericson, University of Michigan; Beryl Hoffman, Elms College

### **Teaspoon Languages for Integrating Programming into Social Studies, Language Arts, and Mathematics Secondary Courses**

Mark Guzdial, University of Michigan

### **Computer Science Teacher Preparation to Address Bloom's 2 Sigma Problem in the Post-COVID19 Age**

Rinat B. Rosenberg-Kima, Technion - Israel Institute of Technology

## Session: Panel: Advancing Opportunities for CS Teachers: How To Best Support Professional Development for Experienced Teachers in K-12 CS Education

Thursday, March 3 / 15:45:00 - 17:00:00 in 555 A/B (STREAMING ROOM)

Yasmin Kafai (University of Pennsylvania); Joanna Goode (University of Oregon); Linnea Logan (White Fish Bay Schools); Bryan Twarek (CSTA); Deborah Fields (Utah State University); Aman Yadav (Michigan State University)

## Special Session: K-12 Computing Education and Education Research Resources

Thursday, March 3 / 15:45:00 - 17:00:00 in 556 A/B (STREAMING ROOM)

Monica M. McGill (CSEdResearch.org & Knox College); Jake Baskin (Computer Science Teachers Association); Miles Berry (University of Roehampton); Quinn Burke (Digital Promise); Leigh Ann Delyser (CSforALL); Shuchi Grover (Looking Glass Venture & Stanford University); Colleen Lewis (University of Illinois at Urbana-Champaign); Briana B. Morrison (University of Virginia); Davina Pruitt-Mentle (National Initiative for Cybersecurity Education (NICE) & National Institute of Standards and Technology (NIST))

## Replit Supporter Session: Collaborative Coding with Replit: Zero-Setup Online Coding for Any Device

Thursday, March 3 / 17:30:00 - 18:20:00 in 553 A/B

# Birds-of-a-Feather (BOF): Flock B and Flock D

Thursday, March 3 / 18:30:00 - 19:20:00

## **Culturally Responsive Pedagogy in Computer Science (CR in CS)- K-12 Teacher Professional Development- Needs and Challenges in 556 A/B**

Raena Cota (New Mexico State University); Enrico Pontelli (New Mexico State University); Paige Prescott (Computer Science Alliance); Lauren Curry (Las Cruces Public Schools); Lisa Hufstедler (Las Cruces Public Schools); Francis Vigil (National Indian Education Association); Yolanda Lozano (Computer Science Alliance); David Rutledge (New Mexico State University)

## FRIDAY

### Demo Session #3: Block-Based Programming and Testing

Friday, March 4 / 10:00:00 - 10:45:00

#### **Demo #3A: Strype: Frame-Based Editing tool for programming the Micro:bit through Python in Exhibit Hall C/D**

Charalampos Kyfonidis (King's College London); Pierre Weill-Tessier (King's College London); Neil Brown (King's College London)

#### **Demo #3B: Snap! 7 – Microworlds, Scenes, and Extensions! in Exhibit Hall C/D**

Dan Garcia (UC Berkeley); Michael Ball (UC Berkeley); Yuan Garcia (Mills High School)

#### **Demo #3C: Testing Tutor: A Testing Pedagogical Active Learning Platform in Exhibit Hall C/D**

Lucas Cordova (Western Oregon University); Jeffrey Carver (University of Alabama); Gursimran Walia (Georgia Southern University)

### Poster Session #1

Friday, March 4 / 10:00:00 - 12:00:00 in Exhibit Hall C/D

#### **An Exploration into School District Decision Making Around Elementary Computer Science Programs**

Eleanor Richard, University of Massachusetts Dartmouth

#### **Building K-12 Teacher Capacity to Expand Uptake in a National CS Curriculum**

Keith Quille, Roisin Faherty, TU Dublin; Brett A. Becker, UCD

### Microsoft Supporter Session: AP Computer Science Principles with Microsoft MakeCode & TEALS

Friday, March 4 / 10:45:00 - 12:00:00 in 553 A/B

### Session: Collaboration: Pedagogical Strategies

Friday, March 4 / 10:45:00 - 12:00:00

#### **Experience Report on the Use of Breakout Rooms in a Large Online Course in Waterplace Ballroom I**

(Omni) Sadia Sharmin (University of Toronto); Larry Yueli Zhang (York University)

**Pair Programming in a Pandemic: Understanding Middle School Students' Remote Collaboration Experiences in Waterplace Ballroom I (Omni)**

Aisha Chung Galdo (University of Florida); Mehmet Celepkolu (University of Florida); Nicholas Lytle (University of Florida); Kristy Elizabeth Boyer (University of Florida)

**It's Challenging but Doable: Lessons Learned from a Remote Collaborative Coding Camp for Elementary Students in Waterplace Ballroom I (Omni)**

Yingbo Ma (University of Florida); Julianna Martinez Ruiz (University of Florida); Timothy D. Brown (University of Florida); Kiana-Alize Diaz (University of Florida); Adam M. Gaweda (North Carolina State University); Mehmet Celepkolu (University of Florida); Kristy Elizabeth Boyer (University of Florida); Collin F. Lynch (North Carolina State University); Eric Wiebe (North Carolina State University)

## Session: K-12: Policy Trends and Considerations

Friday, March 4 / 10:45:00 - 12:00:00

**Trends in CS Teacher Professional Development: A Report from the CSTA PD Committee in Narragansett Ballroom B (Omni)**

Michelle Friend (University of Nebraska at Omaha); Bryan Twarek (Computer Science Teachers Association); James Koontz (Fairfax County Public Schools); Amanda Bell (Computer Science Teachers Association); Abigail Joseph (The Harker School)

**iSchools as Venues for Expanding the K-12 Computer Science Teacher Pipeline in Narragansett Ballroom B (Omni)** David Weintrop (University of Maryland)

**Standards-Aligned Instructional Supports to Promote Computer Science Teachers' Pedagogical Content Knowledge in Narragansett Ballroom B (Omni)**

Satabdi Basu (SRI International); Daisy Rutstein (SRI International); Carol Tate (SRI International); Arif Rachmatullah (SRI International); Hui Yang (SRI International)

## Session: Panel: The Needs of K-12 Computer Science Educators towards Building an Inclusive Classroom: Implications for Policy

Friday, March 4 / 13:45:00 - 15:00:00 in 552 A/B (STREAMING ROOM)

Kalisha Davis (Kapor Center); Bryan Twarek (Computer Science Teachers Association); Dinah Becton-Consuegra (Kapor Center); Sonia Koshy (Kapor Center)

## Session: Special Session: Transitioning from Blocks to Text

Friday, March 4 / 13:45:00 - 15:00:00 in 556 A/B (STREAMING ROOM)

Neil C. C. Brown (King's College London); Michael Kölling (King's College London); Charalampos Kyfonidis (King's College London); Pierre Weill-Tessier (King's College London)

# Session: K-12: Developing the Evidence Base

Friday, March 4 / 13:45:00 - 15:00:00

## **Developing Evidence-Based Teacher Practice Briefs with Middle School Computer Science Teachers in Narragansett Ballroom B (Omni)**

Monica M. McGill (CSEdResearch.org); Anni Reinking (CSEdResearch.org)

## **Elementary Students' Understanding of Variables in Computational Thinking-Integrated Instruction: A Mixed Methods Study in Narragansett Ballroom B (Omni)**

Feiya Luo (The University of Alabama); Wei Yan (University of Florida); Ruohan Liu (University of Florida); Maya Israel (University of Florida)

## **Reimagining Professional Development for K-8 CS Teachers: Evaluating a Virtual, Diffuse Model in Narragansett Ballroom B (Omni)**

Jennifer Tsan (University of Chicago); Merijke Coenraad (University of Maryland); Zachary Crenshaw (University of Chicago); Jen Palmer (University of Chicago); Donna Eatinger (University of Chicago); Kristan Beck (Chicago Public Schools); David Weintrop (University of Maryland); Diana Franklin (University of Chicago)

## **Poster Session #2**

Friday, March 4 / 13:00:00 - 15:00:00 in Exhibit Hall C/D

## **The Sol y Agua RPP: A Bilingual and Culturally Responsive Approach to Introduce Computational Thinking in Middle School**

Monika Akbar, Katherine Mortimer, Grecia Navarrete, Stephanie Galvan, George Molina, Romelia Reyes, The University of Texas at El Paso; Cynthia Ontiveros, Scott Gray, Sarah Escandon, Monica Lyons, Pedro Delgado, Victor Medrano, Haleigh Kneidler, Patricia Benitez, Jacob Ramirez, Jesus Vazquez, Melissa Anderson, El Paso Independent School District

## **Introducing Programming to Middle School Students to Increase Knowledge and Interest in Computer Science**

Callan J. Noak, Jennifer L. Tsan, Sujing Wang, Stefan Andrei, Lamar University

## **Can CS1 Curricula Be Used For Middle School Computer Programming Education?**

Gurmehar Kaur, Chapel Hill High School; Kris Jordan, Jasleen Kaur, University of North Carolina at Chapel Hill

## **Equity in Access to and Participation in K-12 Computer Science Education**

Madeline L Haynes, Yiwen Yang, Natasha Bibriescas, Miriam Jacobson, Stephanie Baker, Jayce Warner, Texas Advanced Computing Center

## **How is Computational Thinking Defined in Elementary Science?**

Jennifer Pietros, Sara Sweetman, Minsuk Shim, University of Rhode Island

## **Poster Session #4 Virtual**

Friday, March 4 / 13:00:00 - 15:00:00

## **Equity-focused Peer Mentoring for High School CS Teachers**

Aleata Hubbard Cheuoua, WestEd; Bryan Twarek, Ed Campos, CSTA; Amy Fetherston, CSTA Wisconsin Dairyland; Yvonne Kao, WestEd; Linnea Logan, CSTA Wisconsin Dairyland

## **A Novel Machine Learning and Artificial Intelligence Course for Secondary School Students**

Joyce Mahon, University College Dublin; Keith Quille, Technological University of Dublin; Brian Mac Namee, Brett A. Becker, University College Dublin

### **Increasing Computing Participation through School Counselors**

Wendy Chi, National Center for Women & Information Technology; Patricia Morreale, Jean Chu, Kean University; Angela Cleveland, Maureen Stewart, National Center for Women & Information Technology

### **Enhance Capacity to Foster Secondary Computer Science Teachers in Multiple Pathways**

Dan Chia-Tien Lo, Brian Lawler, Kennesaw State University

## **2022 ACM Student Research Competition Posters**

Friday, March 4 / 13:45:00 - 17:00:00 in Providence Ballroom I/IV

Graduate

### **Equipping Middle School Teachers with Culturally Responsive Pedagogy for Computer Science Through Community-centered Professional Development**

Gillian Bausch, University at Albany, SUNY

### **Cross-grade Comparison of Computational Thinking in Young Children Using Normalized Unplugged Assessment Scores**

Emily Relkin, Tufts University

Undergraduate

### **K-12 CS Teacher Licensing in the US**

Jessica M Yauney, Brigham Young University

## **Session: K-12: Fostering Partnerships**

Friday, March 4 / 15:45:00 - 17:00:00

### **How a Research-Practice Partnership Refined its Strategy for Integrating CS/CT into K-5 Curricula: An Experience Report in Narragansett Ballroom B (Omni)**

W. Richards Adrion (University of Massachusetts Amherst); Katie Bevan (Springfield Public Schools); Paul Foster (Springfield Public Schools); Denise Matuszczak (Springfield Public Schools); Rachel Miller (Springfield Public Schools); Laura Rita (Springfield Public Schools); Florence R. Sullivan (University of Massachusetts Amherst); Sneha Veeragoudar (University of Massachusetts Amherst); Scott Wohlers (Springfield Public Schools); Melissa Zeitz (Springfield Public Schools)

### **Creating a High Quality, High Impact CS Teacher Prep Program in Narragansett Ballroom B (Omni)**

J. Ben Schafer (University of Northern Iowa); J. Philip East (University of Northern Iowa)

### **Building CS Teacher Capacity Through Comprehensive College/High School Partnerships in Narragansett Ballroom B (Omni)**

Robin Flatland (Siena College); James Matthews (Siena College); Pauline White (Siena College); Mary Anne Egan (Siena College); Jesse Moya (Siena College)

## **Microsoft Supporter Session — MakeCode Sampler Pack!**

Friday, March 4 / 19:00 - 22:00

Jacqueline Russell (Microsoft)

Looking for some high-engagement options for teaching CS? Join us for a fun, hands-on workshop where we'll take a tour around MakeCode – exploring physical computing with the micro:bit, game development with MakeCode Arcade, and game modding with Minecraft! We will walk through step-by-step coding challenges and build projects together that you can use in the classroom. This is a beginner-level workshop – no prior experience required. Attendees should bring a smile and a laptop to the session. Please note: this workshop will only be hosted in person. | Register for the Microsoft MakeCode Sampler Pack! session:

<https://forms.office.com/r/R0F2ACEuss>

## Workshops 3xx

Friday, March 4 / 19:00:00 - 20:00:00

### **W308: Making Art with and about Artificial Intelligence: Three Approaches to Teaching AI and AI Ethics to Middle and High School Students in Providence Ballroom II/III (Omni)**

Benjamin Walsh (University of Colorado Boulder); Safinah Ali (Massachusetts Institute of Technology); Francisco Castro (University of Massachusetts Amherst); Kayla Desportes (New York University); Daniella DiPaola (Massachusetts Institute of Technology); Irene Lee (Massachusetts Institute of Technology); William Payne (New York University); Scott Sieke (CU Science Discovery); Helen Zhang (Boston College)

## Saturday

### **Session: Lightning Talks #2**

Saturday, March 5 / 9:20:00 - 10:35:00

#### **What Programming IDEs Can Learn From MineCraft in Waterplace Ballroom I (Omni)**

Yuan Garcia (Mills High School)

#### **Expanding Computer Science Access by Studying the Impact of AP CS Principles Curriculum in Waterplace Ballroom I (Omni)**

Efrain Lopez (IDEA Public Schools)

#### **(Virtual) Girls Immersed in Robotics Learning in Waterplace Ballroom I (Omni)**

Beryl Hoffman (Elms College); Florence Sullivan (University of Massachusetts, Amherst); Daniel Black (Holyoke Codes); Jacob Bashista (Holyoke Codes); Rachel Darley Gary (Moriarty Research and Evaluation Associates, LLC); Isabel Castellanos (University of Massachusetts, Amherst); Mary Moriarty (Moriarty Research and Evaluation Associates, LLC); Elisabeth Fein (Holyoke Codes); Özkan Yildiz (University of Massachusetts, Amherst); Ali Söken (University of Massachusetts, Amherst); Andrew Pasquale (Holyoke Codes)

### **Session: Considering Math**

Saturday, March 5 / 9:20:00 - 10:35:00

#### **Exploring Math + CS in a Secondary Education Methods Course in Narragansett Ballroom B (Omni)**

Paris Kalathas (Oregon State University); Jennifer Parham-Mocello (Oregon State University); Rebekah Elliot (Oregon State University); Elise Lockwood (Oregon State University)

### **TOCE Highlights #1**

Saturday, March 5 / 9:20:00 - 10:35:00

#### **High School Calculus and Computer Science Course Taking as Predictors of Success in Introductory College Computer Science in Providence Ballroom II/III (Omni)**

Chen Chen (Harvard-Smithsonian Center for Astrophysics); Jane M. Kang (Harvard Graduate School of Education); Gerhard Sonnert (Harvard College Observatory); Philip M. Sadler (Harvard-Smithsonian Center for Astrophysics)



## **Parental Involvement in Computer Science Education and Computing Attitudes and Behaviours in the Home: Model and Scale Development in Virtual Room**

Nina Bresnihan (University of Dublin); Aibhín Bray (University of Dublin); Lorraine Fisher (University of Dublin); Glenn Strong (University of Dublin); Richard Millwood (University of Dublin); Brendan Tangney (University of Dublin)

## **Lightning Talks Session #2**

Saturday, March 5, 09:45:00 - 10:35:00 in 554 A/B

### **What Programming IDEs Can Learn From MineCraft**

Yuan Garcia, Mills High School

## **Lightning Talks Session #2 Virtual**

Saturday, March 5, 09:45:00 - 10:35:00

### **Girls Immersed in Robotics Learning**

Beryl Hoffman, Elms College; Florence Sullivan, University of Massachusetts, Amherst; Daniel Black, Jacob Bashista, Holyoke Codes; Rachel Darley Gary, Moriarty Research and Evaluation Associates, LLC; Isabel Castellanos, University of Massachusetts, Amherst; Mary Moriarty, Moriarty Research and Evaluation Associates, LLC; Elisabeth Fein, Holyoke Codes; Özkan Yıldız, Ali Söken, University of Massachusetts, Amherst; Andrew Pasquale, Holyoke Codes

## **Poster Session #3**

Friday, March 4 / 10:35:00 - 12:30:00 in Exhibit Hall C/D

### **Beyond MCQ: Designing Innovative, Engaging, Autogradable Assessments for Supporting Teaching & Learning in K-12 Computer Science**

Shuchi Grover, Bob Carmichael, Shivram Venkatasubramaniam, Looking Glass Ventures

### **Training Near-Peer Mentors for Instructional Roles in Informal K-12 Computing Programs**

Kristina Kramarczuk, Maya Narayanasamy, Kate Atchison, Jandelyn Plane, University of Maryland, College Park

### **Reflections of Cybersecurity Workshop for K-12 Teachers and High School Students**

Chad Mourning, David Juedes, Allyson Hallman-Thrasher, Harsha Chenji, Savas Kaya, Avinash Karanth, Ohio University

### **Co-Designing Learning Experiences to Support the Development of Culturally Relevant CS Lessons in Elementary Classrooms**

Jennie Chiu, University of Virginia; Anita Crowder, CodeVA; Dwayne Ray Cormier, Virginia Commonwealth University; Sheila Mosby, Petersburg School District; Eric Bredder, University of Virginia

## **Poster Session #3 Virtual**

Friday, March 4 / 10:35:00 - 12:30:00

### **Developing an Ecosystem of Support for K-12 CS Educators**

Bryan Twarek (Computer Science Teachers Association); Janice Mak, Arizona State University; Shaina Glass, Computer Science Teachers Association; Sababu Chaka Barashango, Georgia Institute of Technology; Cindi Chang, Nevada Department of Education



## **Supporting Teacher Professional Learning and Curriculum Implementation Through Collaborative Curriculum Design**

Lijun Ni, Gillian Bausch, University at Albany, State University of New York; Bernardo Feliciano, Hsien-Yuan Hsu, Fred Martin, University of Massachusetts Lowell

## **Session: Service Learning**

Saturday, March 5 / 11:15:00 - 12:30:00

### **A Framework for Socially-Relevant Service-Learning Internship Experiences for High School Students (PCI Best Paper) in Narragansett Ballroom C (Omni)**

Veronica Cateté (North Carolina State University); Amy Isvik (North Carolina State University); Marnie Hill (North Carolina State University)

## **Workshops 4xx**

Saturday, March 5 / 15:00:00 - 18:00:00

### **W402: Beauty and Joy Computing: AP CS Principles & Middle School Curriculum in 553 A/B**

Michael Ball (University of California, Berkeley); Lauren Mock (University of California, Berkeley); Dan Garcia (University of California, Berkeley); Tiffany Barnes (North Carolina State University); Marnie Hill (North Carolina State University); Mary Fries (Education Development Center); Pamela Fox (University of California, Berkeley); Yuan Garcia (Millbrae High School)

## **Session: Virtual Session: Programmatic Considerations**

TBD / -

### **Barriers to New Zealand High School CS Education - Learners' Perspectives in Virtual Room**

Chamindi K. Samarasekara (University of Otago); Claudia Ott (University of Otago); Anthony Robins (University of Otago)

## **Session: Virtual Session: Tools**

TBD / -

### **Scratch and Sense: Using Real-Time Sensor Data to Motivate Students Learning Scratch in Virtual Room**

Hussel Suriyaarachchi (The University of Auckland); Paul Denny (The University of Auckland); Suranga Nanayakkara (The University of Auckland)