2023

UKICER

Swansea University
7-8 September

United Kingdom and Ireland Computing Education Research

United Kingdom Special Interest Group in
Computer Science Education Chapter

technocamps | institute of CODING in wales

TABLE OF CONTENTS

UKICER'23

The UK and Ireland Computing Education Research (UKICER) conference, of the UK Chapter of the ACM Special Interest Group in Computing Science Education (SIGCSE), is emerging as one of the leading forums for researchers and practitioners to meet and share advances in computing science education.

We are a diverse and inclusive community bringing together researchers, academics, industry practitioners and teachers from across the UK and Ireland as well as from the rest of Europe and the wider world.

Swansea University's history dates back to 1920, with Singleton Campus – the venue for UKICER'23 – located in a lovely setting between Singleton Park – one of the biggest parks in the city – and the sea. Swansea is the gateway to the Gower Peninsula, which was designated in 1956 as the UK's first Area of Outstanding Natural Beauty. Stretching for 19 miles in length, the Gower Peninsula is noted for its wonderful coastline, beaches and scenery, its heritage, and its variety of wildlife habitats. To ensure that you do not miss out, UKICER'23 delegates will be transported to the Ocean View in the heart of the Gower Peninsula for the conference banquet.

WIFI

The Swansea University Visitor network is available for visitors and guests of the university who do not have academic accounts/access to eduroam.

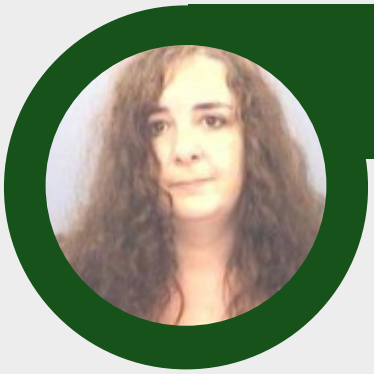
Connect to 'SwanseaUni-Visitors'

The first thing you need to do is view the list of available wireless networks on your device and then connect it to the open SwanseaUni-Visitors SSID. Once you are connected you should be prompted to sign-in. If you are not prompted, open a web browser and type in the URL of https://socialwifi.swansea.ac.uk

Log in

After you have connected, you need to log in using either Facebook credentials or your email address. Once you are logged in, the window may close, or you may be redirected to the university web site.

KEYNOTE SPEAKER



MARIE DELVIN

NEWCASTLE UNIVERSITY

Marie Devlin is a Senior Lecturer at Newcastle University where she serves as Deputy Head of the School of Computing. Her research areas include Methods for Assessing Software Engineering Competency; Technology-Enhanced Learning in Computer Science Education; and Assessment and Feedback in Higher Education (including Metacognition, Peer Assessment and Ipsative Assessment).

SUBJECT TO CHANGE: A COMPUTING EDUCATION RESEARCH JOURNEY

The Computing discipline evolves constantly and therefore so does the environment where we conduct Computing Education Research (CER). Sometimes the terrain can be quite perilous, but you have to persist because ours is a subject that needs to change, especially pedagogically. In this talk I give a brief overview of my journey to become a researcher in Computing Education and outline some of the work I have done at Newcastle and its impact. I give a brief overview of some of the funded projects I became involved in and how my interest in Computing Education evolved into the Educational Practice In Computing research group at Newcastle (EPiC). I give some tips and advice to people new to Computing Education Research, based on my experience of navigating the landscape over the years (without a map), and then outline my next steps.

KEYNOTE SPEAKER

TOM CRICK

SWANSEA UNIVERSITY

Tom Crick is Professor of Digital Education and Policy at Swansea University, where he also serves as Deputy Pro-Vice-Chancellor for Civic Mission. His research interests sit at the research/policy interface with a focus on citizen-centred approaches and impact: CS/STEM/digital education, education policy, AI, data science, science and innovation policy, and skills/infrastructure for the digital/data economy. Tom has led the major science and technology curriculum reforms in Wales over the past 10 years, culminating in the new Curriculum for Wales which is phasing in from September 2022. He is currently an elected Member-at-Large of ACM Council, and has previously been a Vice-President of BCS, The Chartered Institute for IT.

DEVELOPING DIGITALLY ENGAGED, DATA SAVVY AND COMPUTATIONALLY LITERATE LEARNERS (AND CITIZENS): REFLECTIONS FROM WALES

The new Curriculum for Wales, published in January 2020 and phasing in from September 2022, has introduced significant changes to the discipline of CS for all learners aged 3-16. Alongside digital competence as a statutory cross-curricular skills with literacy and numeracy, the Curriculum for Wales, co-constructed by practitioners, is configured around six new interdisciplinary areas of learning and experience, framed by four overarching purposes for developing “future citizens of Wales”. In this talk, I will reflect critically on the first year of these major changes to CS/digital education in Wales, as part of these ongoing curriculum, qualifications and wider education system-level reforms. Furthermore, I will contextualise the Welsh social, cultural, historical, heritage and linguistic lens through which these learner- (and citizen-) centred reforms have been taking place, taking into consideration the landmark Wellbeing of Future Generation (Wales) Act 2015, the UN Sustainable Development Goals, and major societal grand challenges, and the “civic mission” of higher education institutions in supporting these long-term ambitions.

PROGRAMME

THU, 7 SEPTEMBER

08:30	Arrival and Registration			
	Refreshments room (317)			
09:00	Doctoral Consortium	Research in Practice	Works in Progress	Coffee from 10:30
	Room A (200)	*Room B (314)*	*Room C (214)*	*Refreshments room (317)*
12:00	Opening			
	Main room (314)			
12:15	Keynote: *Marie Devlin*: Subject to Change: A Computing Education Research Journey			
	Main room (314)			
13:00	Lunch			
	Refreshments room (317)			
13:45	**Paper Session 1: Tools** (Chair: Olga Petrovska) No More Pencils No More Books: Capabilities of Generative AI on Irish and UK Computer Science School Leaving Examinations. *Joyce Mahon, Brian Mac Namee and Brett Becker* Quick Fixes for novice programmers: effective but under-utilised *Neil Brown, Jamie Ford, Pierre Weill-Tessier and Michael Kölling* Systematic Review of UML Diagramming Software Tools for Higher Education Software Engineering Courses *Yuting Lu and Cristina Adriana Alexandru*			
	Main room (314)			
15:15	Short Presentations from the attendees of the Doctoral Consortium			
	Refreshments room (317)			
15:30	Posters & Coffee			
	Refreshments room (317)			
16:00	**Paper Session 2: Early Education 1** (Chair: Keith Quille) Algorithmic Abstraction in Computer Science Curricula for Primary Schools: The Case of a National Curriculum for 4th Grade. *Mor Friebroon-Yesharim, Michal Armoni and Ronit Ben-Bassat Levy* Engaging primary (K-5) computing teachers in culturally relevant pedagogy through professional development. *Hayley Leonard, Katharine Childs, Jane Waite, Robert Whyte and Sue Sentence*			
	Main room (314)			
17:00	Close of the first day			
18:15	Coach to the **Banquet** venue (*pickup point outside Fulton House)*			

FRI, 8 SEPTEMBER

09:00	**Keynote: *Tom Crick*: Developing Digitally Engaged, Data Savvy and Computationally Literate Learners (and Citizens): Reflections from Wales**	
	Main room (314)	
09:30	**Paper Session 3: Early Education 2** (Chair: Lee Clift) Investigating the Attitudes and Emotions of K-12 Students Towards Debugging *Laurie Gale and Sue Sentence* On Teaching Abstraction in Computer Science: Secondary-School Teachers' Perceptions vs. Practices *Liat Nakar and Michal Armoni*	
	Main room (314)	
10:30	Posters & Coffee	
	Refreshments room (317)	
11:00	**Paper Session 4: Development** (Chair: Casey Hopkins) Exploring the Interplay of Achievement Goals, Self-Efficacy, Prior Experience and Course Achievement *Hannu Pesonen, Juho Leinonen, Lassi Haaranen and Arto Hellas* The Institute of Coding Accreditation Standard: Exploring the Use of a Professional Skills Framework to Address the UK Skills Gap *David Bowers, Alan Hayes, Tom Prickett, Tom Crick, Kevin Streater and Chris Sharp* A module-agnostic reference software development process for different levels of higher-education study *Carlos Da Silva and Jack Carey*	
	Main room (314)	
12:30	Lunch	
	Refreshments room (317)	
13:15	**Workshop:** Futurespective on Educational Technology Use in Computer Science Higher Education	**Guided tour:** The Swansea University History of Computing Collection as an Educational Tool
	Main room (314)	*HoCC (217-218)*
14:45	Closing	
	Main room (314)	

POSTERS

- Pytch — supporting learners over the bridge from blocks to text (Glenn Strong, Ben North, Sara Fiori, Brian Gillespie and Nina Bresnihan)

- Towards Automated Testing and Feedback of Object-Oriented Programming Tasks in Java (Andrew Muncey)

- Generative AI in Software Development Education: Insights from a Degree Apprenticeship Programme (Olga Petrovska, Lee Clift and Faron Moller)

- Exploring Student Views on Collaborative Content Creation for Learning Programming: An Investigation (Jarutas Andritsch and Adriana Wilde)

- CS_LINC - Bridging the Gap to Formal CS Education (Miriam Harte, Keith Nolan, Roisin Faherty, Amanda O'Farrell, Karen Nolan and Eoin O'Neill)

- Sense of Belonging of Undergraduate Computing Students: A Comparative Analysis of University Entry Routes (Catherine Mooney, Brett Becker, Shamima Runa and Andrew McCartan)

- Critical Reflections on the First Year of Computer Science in the New Curriculum for Wales (Tom Crick)

- Embedding Dispositions in Peer Assessment for Software Teams: More than just a "Product'" Focus (Tom Crick, Tom Prickett and Andrew Turnbull)

THU, 7 SEPTEMBER

POSTERS

- Embedding equality, diversity, and inclusion in the computing curriculum in response to AHEP4 requirements (Adriana Wilde)

- A Research-Driven Toolkit to Enhance Gender Balance in Computing Education (Alina Berry and Sarah Jane Delany)

- Disruptors in Educational Technology: A Futurespective Case Study of UK Computing Academics (Tom Crick, Tom Prickett, Emma Anderson, Ian Watson, Neeranjan Chitare and Christina Vasiliou)

- Digital Outreach via Theatre Productions (Faron Moller, Geinor Styles and Luke Clement)

- Technocamps: 30 Years of Digital Education and Professional Development Throughout Wales (Faron Moller)

- An Overview of the Relationship between Spatial Skills and Computing Science (Jack Parkinson)

- Institute of Coding in Wales Digital Skills Bootcamps - A Model for Stackable Micro-credentials (Casey Hopkins, Faron Moller and Laura Roberts)

- Teaching history of computing (John Tucker)

- Local histories of computing (John Tucker)

- Teaching Programming Competencies: A Role for Craft Computing? (Tom Crick, James H. Davenport, Alan Hayes and Tom Prickett)

FRI, 8 SEPTEMBER

Prifysgol Abertawe
Campws Parc Singleton
Swansea University
Singleton Park Campus

Adeiladau	/	Buildings
Adeilad Cyllid	1	Finance Building
Abaty Singleton	2	Singleton Abbey
Adeilad Keir Hardie	3	Keir Hardie Building
Adeilad James Callaghan	4	James Callaghan Building
Llyfrgell 1937	5	1937 Library
Mosg	6	Mosque
Y Llyfrgell a Chanolfan Wybodaeth	7	Library and Information Centre
Adeilad Faraday	8.1	Faraday Building
Tŵr Faraday	8.2	Faraday Tower
Adeilad Talbot	8.3	Talbot Building
Adeilad Wallace	9	Wallace Building
Adeilad Margam	9.4	Margam Building
Compownd Botaneg	10	Botanic Compound
Adeilad Glyndŵr	11.1	Glyndŵr Building
Tŵr Vivian	11.2	Vivian Tower
Y Sied	11.3	The Shed
Yr Adeilad Gwyddor Data	11.4	Data Science Building
Adeilad Grove	12	Grove Building
Adeilad Richard Price	14	Richard Price Building
Adeilad Amy Dillwyn	15	Amy Dillwyn Building
Adeilad Haldane	16	Haldane Building
Tŷ Fulton	17	Fulton House
Tŷ'r Undeb	18	Union House
Canolfan Ynni	19.2	Energy Centre
Techniwm Digidol	24	Digital Technium
Generadur Wrth Gefn	28	Standby Generator
Canolfan Celfyddydau Taliesin a'r Ganolfan Eifftoleg	32	Taliesin Arts Centre and Egyptology Centre
Sefydliad Gwyddor Bywyd 1	33	Institute of Life Science 1
Adeilad Llŷr	34	Llŷr Building
Sefydliad Gwyddor Bywyd 2 / Canolfan Nanolechyd	36	Institute of Life Science 2 / Centre for NanoHealth
Porthdy Rheoli Traffig	40	Traffic Control Lodge
ORACLE	43	ORACLE

Prifysgol Abertawe
Swansea University

LOCAL ORGANISERS

TROY ASTARTE
t.k.astarte @swansea.ac.uk

FARON MOLLER
f.g.moller @swansea.ac.uk

OLGA PETROVSKA
olga.petrovska @swansea.ac.uk

SUPPORTERS

United Kingdom Special Interest Group in Computer Science Education Chapter

technocamps

institute of CODING in wales

technocamps EHP Education | History | Philosophy

technocamps History of Computing Collection