4th International Computer Programming Education Conference

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Contents

Preface
Ricardo Alexandre Peixoto de Queirós and Mário Paulo Teixeira Pinto .......... 0:vii

List of Authors
................................................................................. 0:ix

Committees
................................................................................. 0:xii

Invited Talk
Shifting Programming Education Assessment from Exercise Outputs Toward Deeper Comprehension
André L. Santos ................................. 1:1–1:5

Papers

I’m Sorry Dave, I’m Afraid I Can’t Fix Your Code: On ChatGPT, CyberSecurity, and Secure Coding
Tiago Espinha Gasiba, Kaan Oguzhan, Ibrahim Kessba, Ulrike Lechner, and Maria Pinto-Albuquerque ........................................................ 2:1–2:12

LCSMAR, an AR Based Tool to Inspect Imperative Programs

Can a Content Management System Provide a Good User Experience to Teachers?
Yannik Bauer, José Paulo Leal, and Ricardo Queirós ............................. 4:1–4:8

Sifu Reloaded: An Open-Source Gamified Web-Based CyberSecurity Awareness Platform
José Carlos Paiva, Ricardo Queirós, and Tiago Gasiba ........................... 5:1–5:8

A Gamified Educational Escape Rooms’ Framework for Computer Programming Classes
Ricardo Queirós, Carla Pinto, Mário Cruz, and Daniela Mascarenhas .......... 6:1–6:8

A Systematic Review of Formative Assessment to Support Students Learning Computer Programming
Jagadeeswaran Thangaraj, Monica Ward, and Fiona O’Riordan .................. 7:1–7:13

A New Approach to Perform Individual Assessments at Higher Education Using Gamification Systems
Filipe Portela ..................................................... 8:1–8:12

NLP/AI Based Techniques for Programming Exercises Generation
Tiago Carvalho Freitas, Alvaro Costa Neto, Maria João Varanda Pereira, and Pedro Rangel Henriques ..................................................... 9:1–9:12
Data Visualization for Learning Analytics Indicators in Programming Teaching
   Ranieri Alves dos Santos, Dalner Barbi, Vinicius Faria Culmant Ramos,
   and Fernando Alvaro Ostuni Gauthier ........................................... 10:1–10:7

Automated Assessment of Simple Web Applications
   Luís Mata Costa, José Paulo Leal, and Ricardo Queirós ....................... 11:1–11:8

Haskelite: A Step-By-Step Interpreter for Teaching Functional Programming
   Pedro Vasconcelos ................................................................................ 12:1–12:8

A Systematic Review of Teacher-Facing Dashboards for Collaborative Learning
   Activities and Tools in Online Higher Education

An Experience with and Reflections on Live Coding with Active Learning
   Anders Schlichtkrull ............................................................................. 14:1–14:13
As the world continues its rapid technological evolution, the role of computer programming education has become increasingly pivotal in shaping the future of our societies. The landscape of computer programming education is undergoing profound changes driven by advancements in technology, shifts in pedagogical approaches, and the growing demand for digital skills. As educators, researchers, and practitioners, we find ourselves confronted with new challenges and opportunities that call for a deep exploration of generative tools and their potential to revolutionize the teaching and learning of computer programming.

In this edition of ICPEC, we are excited to delve into a theme that not only reflects the current state of the field but also guides its future trajectory: “Generative Tools and the Future of Teaching-Learning in Computer Programming.”

Generative tools encompass a diverse array of technologies, from code generation frameworks to interactive development environments and automated assessment systems. These tools hold the promise of enhancing both the efficiency and effectiveness of programming education. With their ability to produce code, offer instant feedback, and facilitate collaborative learning, generative tools can empower students and educators alike to engage with programming concepts more deeply and creatively.

However, we must also confront a series of complex questions and challenges:

- How do generative tools impact students’ problem-solving skills and their understanding of fundamental programming concepts?
- What are the ethical considerations surrounding the use of automated assessment systems and code generation tools in educational contexts?
- How can educators best integrate generative tools into their curricula to promote a balanced approach between automation and conceptual mastery?
- What new paradigms of teaching and learning emerge as a result of incorporating generative tools, and how do these paradigms reshape the traditional classroom dynamics?

In addition to generative tools, this edition of ICPEC also highlights new trends, paradigms, and tools that are redefining the landscape of computer programming education. From the rise of interdisciplinary approaches that bridge programming with other fields, to the exploration of alternative programming paradigms and languages, we will explore the rich tapestry of possibilities that lie ahead.

We extend our deepest gratitude to the dedicated individuals who have contributed to making ICPEC 2023 a reality, from the organizing committee to the presenters and attendees. Your passion and commitment are the driving forces behind the success of this conference.

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