Silicon Valley Cybersecurity Conference | Informatics in Schools: Contributing to 21st Century Education

Data Management, Analytics and Innovation
This book constitutes the proceedings of the 12th International Conference on Informatics in Schools: Situation, Evolution and Perspectives, ISSEP 2019, held in Larnaca, Cyprus, in November 2019. The 23 revised full papers presented were carefully reviewed and selected from 55 submissions. They are organized in topical sections named: teacher education in informatics, primary education in informatics, contemporary computer science ideas in school informatics, teaching informatics: from highschool to university levels, contests, competitions and games in informatics.

Information Technology - New Generations
As industries are rapidly being digitalized and information is being more heavily stored and transmitted online, the security of information has become a top priority in securing the use of online networks as a safe and effective platform. With the vast and diverse potential of artificial intelligence (AI) applications, it has become easier than ever to identify cyber vulnerabilities, potential threats, and the identification of solutions to these unique problems. The latest tools and technologies for AI applications have untapped potential that conventional systems and human security systems cannot meet, leading AI to be a frontrunner in the fight against malware, cyber-attacks, and various security issues. However, even with the tremendous progress AI has made within the sphere of security, it's important to understand the impacts, implications, and critical issues and challenges of AI applications along with the many benefits and emerging trends in this essential field of security-based research.

Research Anthology on Artificial Intelligence Applications in Security seeks to address the fundamental advancements and technologies being used in AI applications for the security of digital data and information. The included chapters cover a wide range of topics related to AI in security stemming from the development and design of these applications, the latest tools and technologies, as well as the utilization of AI and what challenges and impacts have been discovered along the way. This resource work is a critical exploration of the latest research on security and an overview of how AI has impacted the field and will continue to advance as an essential tool for security, safety, and privacy online. This book is ideally intended for cyber security analysts, computer engineers, IT specialists, practitioners, stakeholders, researchers, academicians, and students interested in AI applications in the realm of security research.

Capture the Flag
Recent innovations and new technologies in education have altered the way teachers approach instruction and learning and can provide countless advantages. The pedagogical value of specific technology tools and the cumulative effects of technology exposure on student learning over time are two areas that need to be explored to better
determine the improvements needed in the modern classroom. Advanced Methodologies and Technologies in Modern Education Delivery provides emerging research on educational models in the continually improving classroom. While highlighting the challenges facing modern in-service and pre-service teachers when educating students, readers will learn information on new methods in curriculum development, instructional design, and learning assessments to implement within their classrooms. This book is a vital resource for pre-service and in-service teachers, teacher education professionals, higher education administrative professionals, and researchers interested in new curriculum development.

ICCSM2015-3rd International Conference on Cloud Security and Management This book introduces readers to some of the most significant advances in core computer science-based technologies. At the dawn of the 4th Industrial Revolution, the field of computer science-based technologies is growing continuously and rapidly, and is developing both in itself and in terms of its applications in many other disciplines. Written by leading experts and consisting of 18 chapters, the book is divided into seven parts: (1) Computer Science-based Technologies in Education, (2) Computer Science-based Technologies in Risk Assessment and Readiness, (3) Computer Science-based Technologies in IoT, Blockchains and Electronic Money, (4) Computer Science-based Technologies in Mobile Computing, (5) Computer Science-based Technologies in Scheduling and Transportation, (6) Computer Science-based Technologies in Medicine and Biology, and (7) Theoretical Advances in Computer Science with Significant Potential Applications in Technology. Featuring an extensive list of bibliographic references at the end of each chapter to help readers probe further into the application areas of interest to them, this book is intended for professors, researchers, scientists, engineers and students in computer science-related disciplines. It is also useful for those from other disciplines wanting to become well versed in some of the latest computer science-based technologies.

Learning and Collaboration Technologies. Learning and Teaching This book, gathering the Proceedings of the 2018 Computing Conference, offers a remarkable collection of chapters covering a wide range of topics in intelligent systems, computing and their real-world applications. The Conference attracted a total of 568 submissions from pioneering researchers, scientists, industrial engineers, and students from all around the world. These submissions underwent a double-blind peer review process. Of those 568 submissions, 192 submissions (including 14 poster papers) were selected for inclusion in these proceedings. Despite computer science’s comparatively brief history as a formal academic discipline, it has made a number of fundamental contributions to science and society—in fact, along with electronics, it is a founding science of the current epoch of human history (‘the Information Age’) and a main driver of the Information Revolution. The goal of this conference is to provide a platform for researchers to present fundamental contributions, and to be a premier venue for academic and industry practitioners to share new ideas and development experiences. This book collects state of the art chapters on all aspects of Computer Science, from classical to intelligent. It covers both the theory and applications of the latest computer technologies and methodologies. Providing the state of the art in intelligent methods and techniques for solving real-world problems, along with a vision of future research, the book will be interesting and valuable for a broad readership.

Information Security Education. Information Security in Action This book constitutes the thoroughly refereed proceedings of the First International Conference on HCI for Cybersecurity, Privacy and Trust, HCI-CPT 2019, which was held as part of the 21st HCI International Conference, HCII 2019, in Orlando, FL, USA, in July 2019. The total of 1275 papers and 209 posters included in the 35 HCII 2019 proceedings volumes were carefully reviewed and selected from 5029 submissions. HCI-CPT 2019 includes a total of 32 papers; they were organized in topical sections named: Authentication; cybersecurity awareness and behavior; security and usability; and privacy and trust.

Southern School Journal

Design, Motivation, and Frameworks in Game-Based Learning This book constitutes the thoroughly refereed proceedings of the 21st International Conference on Information Security Applications, WISA 2020, held in Jeju Island, South Korea, in August 2020. The 30 full research papers included in this book were carefully reviewed and selected from 89 submissions. They are organized in the following topical sections: AI Security and Intrusion Detection; Steganography and Malware; Application, System, and Hardware Security; Cryptography; Advances in Network Security and Attack Defense; and Cyber Security.

Model-driven Simulation and Training Environments for Cybersecurity This book investigates the goals and policy aspects of cyber security education in the light of escalating technical, social and geopolitical challenges. The past ten years have seen a tectonic shift in the significance of cyber security education. Once the preserve of small groups of dedicated educators and industry professionals, the subject is now on the frontlines of geopolitical confrontation and business strategy. Global shortages of talent have created pressures on corporate and national policy for workforce development. Cyber Security Education offers an updated approach to the subject as we enter the next decade of technological disruption and political threats. The contributors include scholars and education practitioners from leading research and education centres in Europe, North America and Australia. This book provides essential reference points for education policy on the new social terrain of security in cyberspace and aims to reposition global debates on what education for security in cyberspace can and should mean. This book will be of interest to students of cyber security, cyber education, international security and public policy generally, as well as practitioners and policy-makers.
Quality of Information and Communications Technology

This book constitutes the refereed proceedings of the 11th IFIP WG 11.8 World Conference on Information Security Education, WISE 11, held at the 24th IFIP World Computer Congress, WCC 2018, in Poznan, Poland, in September 2018. The 11 revised papers presented were carefully reviewed and selected from 25 submissions. They focus on cybersecurity and are organized in the following topical sections: information security learning techniques; information security training and awareness; and information security courses and curricula.

Cyber Security Education

This book focuses on all the technologies involved in improving the teaching and learning process of some of the sensor-based IoT topics, such as virtual sensors, simulated data acquisition, virtual and remote labs for IoT sensing, gamification experiences and innovative teaching materials, among others. In particular, the articles inside the book show excellent works about hot topics, such as: - Remote labs for IoT teaching, including the full development cycle. - Practical guides for IoT cybersecurity. - Innovative multimodal learning analytics architecture that builds on software-defined networks and network function virtualization principles. - Problem-based learning experiences using designed complex sensor-based IoT ecosystems with sensors, actuators, microcontrollers, plants, soils and irrigation systems. - Block-based programming extensions to facilitate the creation of mobile apps for smart learning experiences. The articles published in this book present only some of the most important topics about sensor-based IoT learning and teaching. However, the selected papers offer significant studies and promising environments.

Advances in Core Computer Science-Based Technologies

Security Education and Critical Infrastructures

Primary Education

This tutorial book gives an overview of the current state of the art in measuring the different aspects of dependability of systems: reliability, security and performance.

Advanced Methodologies and Technologies in Modern Education Delivery

This journal subline serves as a forum for stimulating and disseminating innovative research ideas, theories, emerging technologies, empirical investigations, state-of-the-art methods, and tools in all different genres of edutainment, such as game-based learning and serious games, interactive storytelling, virtual learning environments, VR-based education, and related fields. It covers aspects from educational and game theories, human-computer interaction, computer graphics, artificial intelligence, and systems design. The 19 papers presented in the 15th issue were organized in the following topical sections: multimedia; simulation; cybersecurity; and e-learning.

Intelligent Computing

Dependability Metrics

This two-volume set LNCS 10924 and 10925 constitute the refereed proceedings of the 5th International Conference on Learning and Collaboration Technologies, LCT 2018, held as part of the 20th International Conference on Human-Computer Interaction, HCII 2018, in Las Vegas, NV, USA in July 2018. The 1171 papers presented at HCII 2018 conferences were carefully reviewed and selected from 4346 submissions. The papers cover the entire field of human-computer interaction, addressing major advances in knowledge and effective use of computers in a variety of applications areas. The papers in this volume are organized in the following topical sections: designing and evaluating systems and applications, technological innovation in education, learning and collaboration, learners, engagement, motivation, and skills, games and gamification of learning, technology-enhanced teaching and assessment, computing and engineering education.

Kits, Games, and Manipulatives for the Elementary School Classroom

Informatics in Schools. New Ideas in School Informatics

School Education

Research Anthology on Artificial Intelligence Applications in Security

This volume presents a collection of peer-reviewed, scientific articles from the 15th International Conference on Information Technology - New Generations, held at Las Vegas. The collection addresses critical areas of Machine Learning, Networking and Wireless Communications, Cybersecurity, Data Mining, Software Engineering, High Performance Computing Architectures, Computer Vision, Health, Bioinformatics, and Education.
Activities, Games, and Assessment Strategies for the Foreign Language Classroom This book constitutes the refereed proceedings of the 5th International Conference on Informatics in Schools: Situation, Evolution and Perspectives, ISSEP 2011, held in Bratislava, Slovakia, in October 2011. The 20 revised full papers presented were carefully reviewed and selected from 69 submissions. A broad variety of topics related to teaching informatics in schools is addressed ranging from national experience reports to pedagogical and methodological issues. The papers are organized in topical sections on informatics education - the spectrum of options, national perspectives, outreach programmes, teacher education, informatics in primary schools, advanced concepts of informatics in schools, as well as competitions and exams.

Handbook of Research on Serious Games as Educational, Business and Research Tools Three kids get caught up in an adventure of historic proportions! Anna, José, and Henry are complete strangers with more in common than they realize. Snowed in together at a chaotic Washington D.C. airport, they encounter a mysterious tattooed man, a flamboyant politician, and a rambunctious poodle named for an ancient king. Even stranger, news stations everywhere have announced that the famous flag that inspired “The Star-Spangled Banner” has been stolen! Anna, certain that the culprits must be snowed in too, recruits Henry and José to help catch the thieves and bring them to justice. But when accusations start flying, they soon realize there’s more than justice at stake. As the snow starts clearing, Anna, José, and Henry find themselves in a race against time (and the weather!) to prevent the loss of an American treasure.

Teaching Social and Emotional Learning in Physical Education This report describes capture-the-flag (CTF) competitions and their contemporary use in cyber security education and recreation worldwide. It provides background on CTFs and describes the various competition formats and practices. It reports on an analysis of recent competitions; both an in-depth qualitative examination of a selection of major events and a quantitative analysis of a large, public dataset of events. The analysis describes a range of aspects including formats, challenge types, platforms, event structures, entry requirements and team composition. To create this report, a survey of previous significant competitions was performed and each event was tagged according to a number of research themes and questions. In addition, statistics were obtained from public datasets and used to perform a general analysis of CTF events. Based on the results of the analysis, different events and their practices are compared and contrasted; to find commonalities and identify design decisions and their trade-offs. The report concludes by making recommendations for consideration during event design.

Information Security Education – Towards a Cybersecure Society As teaching strategies continue to change and evolve, and technology use in classrooms continues to increase, it is imperative that their impact on student learning is monitored and assessed. New practices are being developed to enhance students’ participation, especially in their own assessment, be it through peer-review, reflective assessment, the introduction of new technologies, or other novel solutions. Educators must remain up-to-date on the latest methods of evaluation and performance measurement techniques to ensure that their students excel. Learning and Performance Assessment: Concepts, Methodologies, Tools, and Applications is a vital reference source that examines emerging perspectives on the theoretical and practical aspects of learning and performance-based assessment techniques and applications within educational settings. Highlighting a range of topics such as learning outcomes, assessment design, and peer assessment, this multi-volume book is ideally designed for educators, administrative officials, principals, deans, instructional designers, school boards, academicians, researchers, and education students seeking coverage on an educator’s role in evaluation design and analyses of evaluation methods and outcomes.

Beginner's Guide to Developing a High School Cybersecurity Program - For High School Teachers, Counselors, Principals, Homeschool Families, Parents and Cybersecurity Education Advocates - Developing a Cybersecurity Program for High School Students This book constitutes the refereed post-conference proceedings of the Second International Workshop on Model-Driven Simulation and Training Environments for Cybersecurity, MSTEC 2020, held in Guildford, UK, in September 2020 in conjunction with the 24th European Symposium on Research in Computer Security, ESORICS 2020. The conference was held virtually due to the COVID-19 pandemic. The MSTEC Workshop received 20 submissions from which 10 full papers were selected for presentation. The papers are grouped in thematically on: cyber security training modelling; serious games; emulation & simulation studies; attacks; security policies.

Capture the Flag This book constitutes the refereed proceedings of the 13th IFIP WG 11.8 World Conference on Information Security Education, WISE 13, held in Maribor, Slovenia, in September 2020. The conference was held virtually due to the COVID-19 pandemic. The 13 full papers presented were carefully reviewed and selected from 28 submissions. The papers are organized in the following topical sections: teaching methods and tools; cybersecurity knowledge within the organization; and teaching of detection and forensics.

HCI for Cybersecurity, Privacy and Trust This book presents the latest findings in the areas of data management and smart computing, big data management, artificial intelligence and data analytics, along with advances in network technologies. Gathering peer-reviewed research papers presented at the Fourth International Conference on Data Management, Analytics and Innovation (ICDMAI 2020), held on 17-19 January 2020 at the United Services Institute (USI), New Delhi, India, it addresses cutting-edge topics and discusses challenges and solutions for future development. Featuring original, unpublished contributions by respected experts from around the globe, the book is mainly intended for a
professional audience of researchers and practitioners in academia and industry.

Detection of Intrusions and Malware, and Vulnerability Assessment Dynamic Physical Education for Elementary School Children, with more than one million copies sold, returns stronger than ever in its 19th edition. Preservice and in-service elementary teachers will learn to deliver quality, effective, and student-friendly physical education by introducing foundational skills, sport skills, and lifetime activities as well as helping children learn to have fun and be responsible in physical activity settings.

Capture the Flag Security Education and Critical Infrastructures presents the most recent developments in research and practice on teaching information security, and covers topics including: -Curriculum design; -Laboratory systems and exercises; -Security education program assessment; -Distance learning and web-based teaching of security; -Teaching computer forensics; -Laboratory-based system defense games; -Security education tools; -Education in security policies, management and system certification; -Case studies.

Transactions on Edutainment XV This book constitutes the refereed proceedings of the 13th International Conference on the Quality of Information and Communications Technology, QUATIC 2020, held in Faro, Portugal, in September 2020. The 27 full papers and 12 short papers were carefully reviewed and selected from 81 submissions. The papers are organized in topical sections: quality aspects in machine learning, AI and data analytics; evidence-based software quality engineering; human and artificial intelligences for software evolution; process modeling, improvement and assessment; software quality education and training; quality aspects in quantum computing; safety, security and privacy; ICT verification and validation; RE, MDD and agile. *The conference was held virtually due to the COVID-19 pandemic.

Learning, Education & Games, Volume 3: 100 Games to Use in the Classroom & Beyond -Proceedings (published in time for the respective conference).

CTF Events Game-based learning relates to the use of games to enhance the learning experience. Educators have been using games in the classroom for years, and when tied to the curriculum, commercial games are a powerful learning tool because they are highly engaging and relatable for students. Design, Motivation, and Frameworks in Game-Based Learning is a critical scholarly resource that examines the themes of game-based learning. These themes, through a multidisciplinary perspective, juxtapose successful practices. Featuring coverage on a broad range of topics such as educational game design, gamification in education, and game content curation, this book is geared towards academicians, researchers, and students seeking current research on justifying the roles and importance of motivation in making games fun and engaging for game-based learning practice.

Learning and Performance Assessment: Concepts, Methodologies, Tools, and Applications This book provides easy-to-use resources to help you write fun lesson plans. With over 100 activities and games, this book also includes rubrics, spreadsheets, materials lists, and templates.
Dynamic Physical Education for Elementary School Children Americans honor the flag with a fervor seen in few other countries: The Stars and Stripes decorate American homes and businesses; wave over sports events and funerals; and embellish everything from politicians’ lapels to the surface of the moon. But what does the flag mean? In Capture the Flag, historian Woden Teachout reveals that it has held vastly different meanings over time. It has been claimed by both the right and left; by racists and revolutionaries; by immigrants and nativists. In tracing the political history of the flag from its origins in the American Revolution through the present day, Teachout demonstrates that the shifting symbolism of the flag reveals a broader shift in the definition of American patriotism. A story of a nation in search of itself, Capture the Flag offers a probing account of the flag that has become America’s icon.