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Adriana Compagnoni · William Casey ·
Yang Cai · Bud Mishra (Eds.)

Bio-inspired Information and Communication Technologies

11th EAI International Conference, BICT 2019
Pittsburgh, PA, USA, March 13–14, 2019
Proceedings

Editors

Adriana Compagnoni
Stefens Institute of Technology USA
Hoboken, NJ, USA

Yang Cai
Cylab
Carnegie Mellon University
Pittsburgh, PA, USA

William Casey
Carnegie Mellon University
Pittsburgh, PA, USA

Bud Mishra
New York University
New York, NY, USA

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Preface

The 11th International Conference on Bio-inspired Information and Communications Technologies (BICT 2019) was held March 13–14, 2019, at Carnegie Mellon University in Pittsburgh Pennsylvania USA. BICT attracts researchers and practitioners in diverse disciplines that seek the understanding of key principles, processes, and mechanisms in biological systems and leverage those understandings in design, engineering, and technological applications. Past iterations of the conference have attracted significant contributions in direct bioinspiration (physical biological materials and systems used within technology) as well as indirect bioinspiration (biological principles, processes, and mechanisms used within the design and application of technology). This year, the scope expanded to include a third thrust: foundational bioinspiration (bioinspired aspects of game theory, evolution, information theory, and philosophy of science). Through foundational bioinspiration, we gain scientific and philosophical perspectives into the role of emergent bioinspired and biomimicry technologies and their wider implications and applications.

Biology offers an empirical and profound glimpse of dynamic stability, robustness, control, resilience, and survival. Accordingly, the application of biological research to systems and technology holds immense potential and reveals many technical challenges. We enjoyed a full two-day program featuring many fruitful discussions and presentations charting the current and future advances in bioinspired technologies.

The proceedings contain 14 accepted papers (acceptance rate of 52%). In addition to the accepted papers found here the 2019 BICT conference contained four special sessions: Human Machine Teaming (chaired by Ryan D. McKendrick, Northrup Grumman), Ethics in AI Applications in Industry (chaired by Thomson Nguyen, Kleiner-Perkins), and Re-Engineering Philosophy of Nature, Multiple Realisation and Natural Kinds (chaired by Paola Hernández-Chávez, University of Pittsburgh), and Nature and Games celebrating Bud Mishra's 60th birthday (chaired by Steven Massey, University of Puerto Rico). Additionally, an interactive music composition titled "Around the B-E-ES"! was presented by Jakub Polaczyk (NY Conservatory). The 2019 keynote speakers were: Sheri M. Markose (Professor of Economics at the University of Essex), Brian Skyrms (Distinguished Professor of Logic and Philosophy of Science, Economics, and Philosophy at University of California Irvine, and Professor of Philosophy at Stanford University), Michael Lotze (Department of Surgery, Immunology, and Bioengineering), and Bill Novak (Software Engineering Institute, Carnegie Mellon University).

June 2019

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