Women Led Research in Computational Intelligence

Alice E. Smith, IEEE Life Fellow

This talk will give a current overview of some of the exciting and impactful research endeavors in computational intelligence by women led investigative teams from around the world. The work is taken from the 2022 landmark volume *Women in Computational Intelligence: Key Advances and Perspectives on Emerging Topics*, https://link.springer.com/book/10.1007/978-3-030-79092-9. The 34 authors of this book are nearly all women and represent thirteen countries across five continents. All chapters are authored by IEEE Women in Computational Intelligence members except the first chapter which is a professional biography of computer pioneer Admiral Grace Hopper by Jill S. Tietjen, an esteemed author on women and technology.

The book is structured into four main sections of Intelligence, Learning, Modeling, and Optimization. The primary technical methods include artificial neural networks, evolutionary and swarm computation, and fuzzy logic and systems. The wealth of applications can be seen throughout the nineteen chapters within this volume. These include natural language processing, intelligent tutoring, autonomous systems, digital pathology, intrusion detection, and energy management. The talk will highlight a sampling of these research chapters, explaining the importance and novelty of the work described.

A unique part of this book is the biographies of the authors which include information concerning their beginnings and advancement in computational intelligence research along with advice for those considering this field and its possibilities. The talk will also give some short videos from these authors on their experiences with computational intelligence and their career advice to those getting started. The aim of this talk to celebrate the contributions of women in CI and to inspire future generations of CI scholars through a lens of diversity and inclusion.