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Research Articles

1.

Optimizing Nonlinear Systems in Applied Mathematics Through Computational Models

Elina Virtanen, Wei-Chen Huang, Fatima Al-Mansouri, José Carlos Mendoza

Elina Virtanen: University of Turku, Turku, Finland; Wei-Chen Huang: University of Tasmania, Hobart, Australia; Fatima Al-Mansouri: University of Antioquia, Medellín, Colombia; José Carlos Mendoza: University of Antioquia, Medellín, Colombia

Keywords: nonlinear systems, computational models, applied mathematics, numerical simulations, scalability, optimization

2.

Evaluating the Impact of Community Health Interventions on Chronic Disease Prevalence in Urban Areas

Sophie Müller, Haruto Nakamura, Fatima Al-Mansouri

Kyungpook National University, Daegu, South Korea; Kanazawa University, Kanazawa, Japan; Jordan University of Science and Technology, Irbid, Jordan

Keywords: community health, chronic disease, urban populations, public health intervention, health education, disease prevalence

3.

Assessing the Impact of Microfinance on Rural Economic Development: A Comparative Analysis

Linas Vaitkus, Farzana Rahman, Min-Jun Lee

Vilnius University, Vilnius, Lithuania; University of Dhaka, Dhaka, Bangladesh; Kyungpook National University, Daegu, South Korea

Keywords: microfinance, rural development, economic growth, cultural impact, panel data, policy frameworks

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4.

Epigenetic Regulation in Cellular Differentiation: Insights from Multi-Omic Approaches

Dr. Ingrid Hansen, Prof. Bat-Erdene Tserendorj, Dr. Nneka Okeke

Dr. Ingrid Hansen, University of Tromsø, Tromsø, Norway; Prof. Bat-Erdene Tserendorj, National University of Mongolia, Ulaanbaatar, Mongolia; Dr. Nneka Okeke, Oklahoma State University, Stillwater, USA

Keywords: epigenetics, cellular differentiation, multi-omics, DNA methylation, histone modification, gene expression

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5.

Enhancing Machine Learning Models with Cross-Domain Feature Adaptation Techniques

Yasuko Tanaka, Omar Al-Khatib, Aissatou Diouf

Kanazawa University, Kanazawa, Japan; Al-Baath University, Homs, Syria; Cheikh Anta Diop University, Dakar, Senegal

Keywords: machine learning, cross-domain adaptation, feature extraction, neural networks, domain adaptation, transfer learning

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6.

Cultural Influences on Behavioral Patterns: A Comparative Analysis Across Diverse Regions

Miguel Rocha, Suriya Chaiwat, Zahra Farahani

University of Coimbra, Coimbra, Portugal; Chiang Mai University, Chiang Mai, Thailand; Ferdowsi University of Mashhad, Mashhad, Iran

Keywords: behavioral analysis, cultural influences, cross-cultural psychology, social dynamics, conformity, individualism

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7.

Exploring Anomalous Hall Effect in Two-Dimensional Transition Metal Dichalcogenides

Liang Wei Chen, Alejandro Ortega, Amina Al-Mansur

Condensed Matter Physics Department, Universiti Sains Malaysia, Penang, Malaysia; Center for Theoretical Physics, Gadjah Mada University, Yogyakarta, Indonesia; Institute for Advanced Studies, University of Tasmania, Hobart, Australia

Keywords: anomalous Hall effect, transition metal dichalcogenides, spintronics, density functional theory, Berry curvature, spin-orbit coupling

8.

Innovative Approaches to Harnessing Offshore Wind Energy in Remote Pacific Regions

Ingrid Larsen, Arjun Mishra, Fatima Rahman

University of Tromsø, Tromsø, Norway; University of Vermont, Burlington, USA; University of the South Pacific, Suva, Fiji

Keywords: offshore wind energy, renewable energy, Pacific regions, wind turbines, climate change, energy sustainability