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Research Articles

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Enhancing Human-Robot Collaboration: A Study on Adaptive Control Systems for Better Efficiency

Arif Wijaya, Priya Mishra, Jelani Kadogo

Gadjah Mada University, Yogyakarta, Indonesia; Banaras Hindu University, Varanasi, India; University of Vermont, Burlington, USA

Keywords: human-robot collaboration, adaptive control systems, machine learning algorithms, reinforcement learning, real-time feedback, manufacturing robotics

2.

Global Trends in Antimicrobial Resistance: Assessing the Impact of Environmental Factors

Liang Wei, Fatima Al-Hassan, Ana María Torres

Liang Wei - University of Tartu, Tartu, Estonia; Fatima Al-Hassan - University of New Mexico, Albuquerque, USA; Ana María Torres - University of Concepción, Concepción, Chile

Keywords: antimicrobial resistance, environmental impact, genomic analysis, pollution, climate change, public health

3.

Innovative Curriculum Development: Integrating Multicultural Perspectives in Global Education

Ana Rodríguez, Mingli Chen, Nabilah El-Sayed

University of Coimbra, Coimbra, Portugal; Tribhuvan University, Kathmandu, Nepal; University of Manitoba, Winnipeg, Canada

Keywords: multicultural education, curriculum development, global education, cultural inclusivity, educational innovation, curriculum design

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4.

Exploring Quantum Fluctuations in Low-Dimensional Condensed Matter Systems Using Advanced Techniques

Elena Morales, Sujan Shrestha, Fatima Al-Hassan

Elena Morales: Pontifical Catholic University of Peru, Lima, Peru; Sujan Shrestha: Tribhuvan University, Kathmandu, Nepal; Fatima Al-Hassan: University of Vermont, Burlington, USA

Keywords: quantum fluctuations, low-dimensional systems, condensed matter, two-dimensional materials, electronic properties, conductivity, magnetism

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5.

Assessing Biodiversity in Semi-Arid Ecosystems: Comparative Analysis and Conservation Strategies

Carlos Rivera, Narges Ahmadi, Jing Huang

Department of Biology, University of Puerto Rico, San Juan, Puerto Rico; Department of Environmental Science, Ferdowsi University of Mashhad, Mashhad, Iran; Department of Ecology, Al-Baath University, Homs, Syria

Keywords: biodiversity, semi-arid ecosystems, conservation strategies, species richness, ecological resilience, keystone species

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6.

Elucidating the Role of DNA Methylation in Epigenetic Regulation of Gene Expression in Mammalian Cells

Hiroshi Takayama, Fatima El-Sayed, Juan Carlos Oliveira

University of Rostock, Rostock, Germany; University of Nairobi, Nairobi, Kenya; University of Dar es Salaam, Dar es Salaam, Tanzania

Keywords: DNA methylation, epigenetic regulation, gene expression, mammalian cells, bisulfite sequencing, RNA-seq

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7.

Exploring the Interplay of Topological Spaces and Homotopy in Higher Dimensional Manifolds

Chen Wei, Fatima El-Mahdi, Jorge Ramirez, Zawadi Banda

University of Zambia, Lusaka, Zambia; Cheikh Anta Diop University, Dakar, Senegal; Central University of Venezuela, Caracas, Venezuela

Keywords: topology, homotopy, manifolds, algebraic topology, spatial transformations, mathematical modeling

8.

Evaluating the Impact of Health Education on Disease Prevention: A Cross-Continental Study

Dr. Lara Schumann, Dr. Kwame Mensah, Dr. Araceli Benítez

University of Graz, Graz, Austria; University of Ghana, Accra, Ghana; University of Guadalajara, Guadalajara, Mexico

Keywords: health education, disease prevention, public health, cultural adaptation, mixed-methods, behavioral change