



IEOM Society

"Achieving and Sustaining Operational Excellence"

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Student Paper Competition Winner Awards

1st Place

A Novel Application of System Survival Signature in Supply Chain Risk Management

Abroon Qazi, John Quigley and Alex Dickson
University of Strathclyde, Glasgow, Scotland, United Kingdom

2nd Place

A Recommended Approach to Improve Utilization of Local Workforce in the Middle East Megaprojects

Omar Galil and Troy Nguyen
Florida Institute of Technology, Melbourne, Florida, USA

3rd Place

Cybersecurity Investment Optimization with Risk: Insights for Resource Allocation

Yueran Zhuo and Senay Solak
University of Massachusetts Amherst, Massachusetts, USA

Honorable Mention

Applying Variance Performance Measures for Variable Service-Rate Queueing Simulation Models

Paul D. Babin, Department of Industrial and Systems Engineering, Mississippi State University, USA
Allen G. Greenwood, Prince Sultan Univ., Riyadh, KSA and Miss. State Univ., USA

Honorable Mention

Design of X-bar&R Control Charts for Monitoring Quality of Care for Hypertension

Tamador Albloushi, Aisha Suwaidi, Noura Zarouni, Asma Abdelrahman and Mohammad Shamsuzzaman
University of Sharjah, United Arab Emirates

Senior Design Project Poster Competition Winner Awards

1st Place

Identify KPIs to Improve Dealership Sales and Profitability

Xiang Li, Zhehui Wang, Han Lin Yeo, and Yunyan Zhang
Industrial and Operations Engineering, University of Michigan, Ann Arbor, USA

2nd Place

Containership Routine Problem: Modeling and Optimization using Traveling Salesman Problem

Hanan Abdullah, Nasim Najieb, and Razan Ashour
Department of Industrial Engineering and Management, University of Sharjah, UAE

Best Poster Awards

1st place

Developing a Patient Transfer Device Prototype Using Human Factors Techniques and Human Digital Modeling

Brittney Jimerson, Eui Park, and Steven Jiang
North Carolina A&T State University, Greensboro, NC, USA

2nd place:

Fuzzy Modelling of Uncertain Data in the Layers of Protection Analysis

Nouara Ouazraoui
University of Batna, Algeria

3rd place:

Zonal Analysis of PHEVs/EVs Penetration: A Mean to Mitigate Vehicle Emissions

Lena Ahmadi, Pedram Yazdan Panah, Ali Elkamel, Sabah Abdul-Wahab, Eric Croiset, Peter Douglas, University of Waterloo, Canada

Suad Al-Adwani, Department of Environmental Technology Management, Kuwait University
Evgueny Entchev, Energy Technology Centre, Natural Resource Canada, Ottawa, Canada

Best Track Papers Awards

Artificial Intelligence Track

ID 299 Fuzzy Modelling of Uncertain Data in the Layers of Protection Analysis

Nouara Ouazraoui, University of Batna-Algeria, Batna, Algeria

ID 223 Data Mining Application in Banking Sector with Clustering and Classification Methods

Asli Çaliş, Gazi University, Ankara, Turkey

Ahmet Boyaci, Hitit University, Çorum, Turkey

Kasim Baynal, Kocaeli University, Kocaeli, Turkey

Automation and Control Track

ID 401 Evaluation of Deadlock Control Design s in Automated Manufacturing Systems

Abdulrahman M. Al-Ahmari, and Husam Kaid, King Saud University, Riyadh, Saudi Arabia

Emad Abouel Nasr, King Saud University, Riyadh, Saudi Arabia and Helwan University, Cairo, Egypt

Abdulaziz El-Tamimi, King Saud University, Riyadh, Saudi Arabia

Zhiwu Li, Xidian University, Xi'an, China

Case Studies Track

ID 100 Simulation Helps Local Grocery Store Compete Effectively Against Large Chains

Edward Williams, University of Michigan – Dearborn, USA

Jared Gruber, Oakwood Healthcare, Dearborn, Michigan, USA

Renée Smiddy, Henry Ford Health System, Detroit, Michigan, USA

Jeffrey Watson, Credit Acceptance, Southfield, Michigan, USA

Computers and Computing Track

ID 164 Diacritics of Arabic Natural Language

Rosziati Ibrahim, Universiti Tun Hussein Onn Malaysia, Parit Raja, Batu Pahat, Johor, Malaysia

Construction Management Track

ID 259 Mobile On-site Factories – Scalable and Distributed Manufacturing Systems for the Construction Industry

Patrick Dallasega, Dominik T. Matt and Erwin Rauch, Free University of Bolzano, Italy

Energy Track

ID 446 A Small Hydro Power Plant at Tsanga River (Nyanga) to Feed into a Grid

Charles Mbohwa and Loice Gdukeya, University of Johannesburg, South Africa

ID 347 Wind-Solar Energy Potentials for Three Free Trade and Industrial Zones of Iran

Ali Mostafaeipour Yazd University, Yazd, Iran

Kasra Mohammadi and Majid Sabzpooshan, Kashan, Iran

Engineering Economy Track

ID 688 Versatile Multi-Objective Genetic Optimization for Non-Identical Multi- Story Building Projects

Fatma Agrama, Menoufia University, Shebien El-Koom, Menoufia, Egypt

Engineering Education Track

ID 323 Boosting Students' Proficiency in Thermodynamics via E-Learning

Waleed Ahmed and Ali Al Marzouqi, UAE University, Al Ain, Abu Dhabi, United Arab Emirates

Engineering Management Track

ID 438 An Alternative Framework for Engineering Change Management

Michael Mutingi, University of Botswana, Gaborone, Botswana

Charles Mbohwa, University of Johannesburg, South Africa

Herbert Mapfira, Gaborone, South East, Botswana

Entrepreneurship and Innovation Track

ID 615 Worldwide Venture Capital, Intellectual Property Rights and Innovation

Arsalan Safari, Massachusetts Institute of Technology (MIT), Cambridge, MA. USA

Facilities Planning and Management Track

ID 551 Two Step Facility Layout Optimization of an Indian Bus Body Manufacturing Plant Using Artificial Bee Colony Algorithm and its Variants

Suman Samanta, Deepu Philip, Rishabh Deo Mall and Amandeep Singh IIT Kanpur, Uttar Pradesh, India

Healthcare Systems Track

ID 642 A Multi-Criteria Approach for Nurse Scheduling - Fuzzy Simulated Metamorphosis Algorithm

Michael Mutingi, University of Botswana, Gaborone, Botswana
Charles Mbohwa, University of Johannesburg, South Africa

Human Factors and Ergonomics Track

ID 559 Design and Construction of an Ergonomic Footrest for an Electric Three Wheeler Vehicle

Abu Raihan Md. Harunur Rashid, Islamic University of Technology (IUT), Gazipur, Dhaka, Bangladesh

ID 408 The Musculoskeletal Disorder Effects on the Use of Single and Dual Monitor Workstations

Rene Estember, Regil Panugot and Angelica Vale, Mapua Institute of Technology, Manila, Philippines

IE/OM in Asia Track

ID 524 Multivariate Statistical Process Control for Engine Flatness Using Two-Dimensional Fused LASSO

Yongting Lu and Yanting Li, Department of Industrial Engineering, Shanghai Jiao Tong University, China

Information Technology & Information Systems Track

ID 433 Co-Utility: Self-Enforcing Protocols without Coordination Mechanisms

Josep Domingo-Ferrer, Jordi Soria-Comas and Oana Ciobotaru, Universitat Rovira i Virgili, Tarragona, Catalonia, Spain

ID 529 Smart City Logistik Erfurt (SCL): ICT Support for Managing Fully Electric Vehicles in the Domain of Inner City Freight Traffic

Wilhelm Rossak, Volkmar Schau and Harald Hempel, FSU Jena, Thuringia, Germany
Steffen Späthe, Navimatix GmbH, Jena, Thuringia, Germany

Inventory Management Track

ID 156 To Define Service Level in an Integrated Model for Warehouse and Inventory Planning by Utilizing Heuristic Solution: An Example

Ömer Faruk and Murat Baskak, YILMAZ, Istanbul, Besiktas, Turkey
Hikmet Erbiyik, Yalova, Turkey

Lean and Six Sigma Track

ID 471 Set-up Time Reduction at Stamping Station 1 of Tri-R Allied Industries Incorporated

Frenzel Paz S. Avecilla, Jannine S. Fameronag, Nida C. Polled, Alfredo A. Gatdula and Rachel C. Villanueva, Malayan Colleges Laguna, Pulo Diezmo, Cabuyao City, Laguna, Philippines

ID 004 A Scheme to Achieve Distribution Agility

Bernardo Villarreal, Lorena Garzafox and Etna Muraira, Universidad de Monterrey, San Pedro Garza Garcia, Nuevo Leon, Mexico

Logistics Management Track

ID 365 Optimum Clustering and Routing Model using CVRP Cluster-First, Route-Second in a 3PL Provider

Ketut Ayu, Nike Septivani, Ani Ani, Stephanie Xu and Sherly Kwan, Jakarta, Indonesia

Manufacturing and Design Track

ID 499 Production and Optimization of Aesthetic Braided Composite Bracket and Archwires by Wear Damages

Sarder Sadique, Marshall University, Huntington, WV, USA

Modeling and Simulation Track

ID 065 Mental Model Moderation, Modification and Managing (5M) framework, a System Dynamics and Brunswikian Lens Model approach to Complex Decision Making

Ramy Harik, University of South Carolina, Columbia, South Carolina, USA
Wissam EL Hachem, University of Bergen, Hordaland, Norway
Joseph Khoury, Methode Electronics Inc., Mriehel, Qormi, Malta

ID 531 Buoyancy Ratio Effects on Coupled Radiation and Double-Diffusive Convection in Non-Gray Air-H₂O Mixtures

Mohammed Cherifi and Siham Laouar-Meftah, University M'Hamed Bougara, Boumerdes, Algeria
Denis Lemonnier Institut P' (UPR 3346), Futuroscope Poitou-Charente, France
Abderrahmane Benbrik, Boumerdes, Algeria

Operations Management Track

ID 112 Collaborative Processes within Virtual Manufacturing Business Networks: How SMEs can be benefited?
AHM Shamsuzzoha, Sultan Qaboos University, Muscat, Oman
Petri Helo, University of Vaasa, Finland

Operations Research Track

ID 075 Metaheuristics for Two-stage No-Wait Flexible Flow Shop Scheduling Problem
Mageed A. Ghaleb, Umar S. Suryahatmaja and Ibrahim M. Alharkan, King Saud University, Riyadh, Saudi Arabia

ID 295 Analyzing the Effect of Non-normality on the Solution Space for the Economic Statistical Design of X-bar Control Charts

Abdur Rahim, University of New Brunswick, Fredericton, New Brunswick, Canada
Santiago-Omar Caballero-Morales, Huajuapán de León, Oaxaca, Mexico

Production Planning and Management Track

ID 211 Simulation Optimization with GA and OCBA for Semiconductor Back-End Assembly Scheduling
James Lin and Chien-Ming Chen, NTHU, Hsinchu, Taiwan

Project Management Track

ID 151 A Fuzzy Linguistic Approach for Human Resource Evaluation and Selection in Software Projects
Vassilis C. Gerogiannis, Elli Rapti, Anthony Karageorgos and Panos Fitsilis, Technological Education Institute of Thessaly, Larissa, Greece

Quality Control and Management Track

ID 381 Estimating Sporadic Change Point in the Mean of Polynomial Profiles
Mona Ayoubi and Reza Baradaran Kazemzadeh, Tarbiat Modares University, Tehran, Iran

Reliability and Maintenance Track

ID 361 Implementing a Reliability-Centered Maintenance Model for a Power Distribution System: A Case Study in Saudi Arabia

Salem Alshahrani, National Guard, Health Affair, Dammam, Saudi Arabia
Laith Al-Hadidi, King Fahd University, Dahrán, Saudi Arabia

Service Systems and Service Management Track

ID 067 Efficiently Serving Customers at a Call Center
Chih-Chin Liang, Department of Business Administration, National Formosa University, Huwei Township, Yunlin County, Taiwan

Supply Chain Management Track

ID 393 Multi-Criteria Decision Approach for a Sustainable Reverse Logistics Network under Fuzzy Environment
Kuldeep Chaudhary, Amity University, Uttar Pradesh, India
P.C. Jha, Jyoti Darbari and Vernika Agarwal, University of Delhi, India

Sustainability and Green Systems Track

ID 115 Capacitive Deionization based Water Desalination System using an MPPT based Solar Charge Controller
Sai Shankar Balakrishnan, Pranav Pattabi and Kiran Raj R, Chennai, Tamil Nadu, India

ID 547 A Polynomial Goal Programming Model with Application to Energy Consumption and Emissions in United Arab Emirates

Raja Jayaraman, Khalifa University, Abu Dhabi, United Arab Emirates
Davide La Torre, Khalifa University, UAE and University of Milan, Italy
Tufail Malik and Yanthe Pearson, Khalifa University, Abu Dhabi, United Arab Emirates

Systems Engineering Track

ID 176 Parallel Implementation of Multiple Linear Regression Algorithm based on MapReduce
Moufida Rehab Adjout and Faouzi Boufares, Laboratory LIPN-UMR 7030-CNRS, Paris 13 University, Villetaneuse, France

Technology Management Track

ID 205 Root cause Analysis of the BP Oil Spill in the Gulf of Mexico: Management-Technical Failure or Safety Ignorance
Hatem Oun, University of Nottingham, Nottinghamshire, United Kingdom

Transportation Track

ID 43: Dual Cycle Mode Scheduling of Internal Transfer in Container Terminals Using a Genetic Algorithm
M. Nashat Fors, Ghada Elnaggar and Yasmine Abouelseoud, Alexandria University, Alexandria, Egypt