

# Competition Winners

7<sup>th</sup> North American IEOM Conference, Orlando, USA, June 11-14, 2022



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## Sponsors and Partners



*First Place Winner*

**SIEMENS**  
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## ID 133 Applying CAD/CAE/CAM Techniques for Optimizing the Design and Reducing the Cost of a Pediatric Stander

Carlos Arenas-Calvo, Sebastián Gifford-Velasquez, Alberto Flores-Perez, Juan Quiroz-Flores and Martin Collao-Diaz  
Facultad de Ingeniería y Arquitectura  
Universidad de Lima, Lima, Perú



*2<sup>nd</sup> Place Winner*

**SIEMENS**  
*Ingenuity for life*

**ID 02 Strategic prospective to improve the environmental sustainability of the copper mining industry in Peru**  
Gabriela Chumacero-Mamani, Claudia Rossana Chávez-Yánac and Edilberto Miguel Ávalos-Ortecho, Faculty of Engineering and Architecture  
Universidad de Lima, Lima, Lima, Perú



*2<sup>nd</sup> Place Winner*



# ID 276 Assessing the Effect of Physical Health Struggles of the Frontline Delivery Riders to their Mental Workload Using NASA TLX

Jaimelhen M. Aviñante, Roland Batucal, Roi Vincent B. Limin, Rose-Ann P. Pasiona, Danica Myle B. Tibayan and Janina Elyse A. Reyes, Industrial Engineering Department, Technological Institute of the Philippines-Manila, Philippines



**3<sup>rd</sup> Place Winner**

**SIEMENS**  
*Ingenuity for life*

## **ID 162 Productivity Increase Through the Application of Lean, TQM and SLP Tools in the Peruvian Craft Brewery Cluster**

José Ulloa-Durand, Ander Vargas-Altamirano, Alberto Flores-Pérez,  
Juan Quiroz-Flores and Martín Collao-Diaz  
Facultad de Ingeniería y Arquitectura  
Universidad de Lima, Lima, Perú



**3<sup>rd</sup> Place Winner**



## **ID 519 Effects of Sleep Quality on the Fatigue Level of Students during COVID-19 Pandemic**

Ma. Janice J. Gumasing, Julianne Mikhaella C. delos Reyes, Louis Miguel C. Dural, Julia Sofia D. Mangaoang, and Gaea Marithe W. Victor  
School of Industrial Engineering and Engineering Management  
Mapua University  
Muralla St., Intramuros, Manila, Philippines



*First Place Winner*

## ID 154 Integrating Virtual Reality and Motion Capture in Unity 3D for the Training of Children with Cerebral Palsy

Xiaoxu Ji, Department of Biomedical, Industrial and Systems Engineering,  
Gannon University, Erie, USA

Kristen Snarski, Department of Physical Therapy, Gannon University, Erie, USA

Arnon Ashkenazi, **Ethan Swierski** and Davide Piovesan, Member, IEEE,  
Department of Biomedical, Industrial and Systems Engineering  
Gannon University, Erie, USA



*2<sup>nd</sup> Place Winner*

**ID 344 Gen Z's Attitude to Cultural Appropriation: a Case Study of The Appointment of Pon Papua's Ambassador**  
Riza Yuli Astuti and Yanuarita Kusuma Permata Sari  
Communication Science Department  
Faculty of Digital Communication and Hotel & Tourism  
Bina Nusantara University, Jakarta, Indonesia



# Undergraduate Research Competition



*3rd Place Winner*

## ID 473 Comparing backpropagation-based neural networks and deep learning to predict the NASA Task Load Index

Gabriel Perez, Juanita Gonzalez and Dr. Luis Carlos Rabelo,  
Department of Industrial Engineering & Management Systems,  
University of Central Florida, Florida



*First Place Winner*



## ID 617      Development of aE-bike sharing system through the use of IDeS Method

Curzio Pagliari and Martina Marruganti, Master Degree Student, Department of Industrial Engineering, Alma Mater Studiorum University of Bologna, Bologna, Italy

Leonardo Frizziero, Senior Assistant Professor, Department of Industrial Engineering, Alma Mater Studiorum University of Bologna, Bologna, Italy



**2<sup>nd</sup> Place Winner**

## ID 435 Big Data for Village-level Smart Farms

Eric De Vera Reynoso, School of Industrial Engineering and Engineering Management, Mapua University, Manila, Philippines  
Grace Lorraine Intal, School of Information Technology, School of Industrial Engineering and Engineering Management, Mapua University, Manila, Philippines



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*3<sup>rd</sup> Place Winner*



## ID 67 COVID-19 Vaccination Intention in Indonesia: A Comprehensive Conceptual Model

Tri Widiandi and Romadhani Ardi, Department of Industrial Engineering, Faculty of Engineering Universitas Indonesia, Depok, Indonesia

Himma Firdaus, National Research and Innovation Agency of the Republic of Indonesia, Tangerang Selatan, Indonesia



# Master Thesis Competition

*First Place Winner*

## ID 576 Unlocking the Full Potential of Augmented Reality for Decision Making Under Battlefield Stress

Betsy Guzmán

Department of Industrial Engineering and Management Systems

University of Central Florida

Orlando, Florida, USA



# Master Thesis Competition

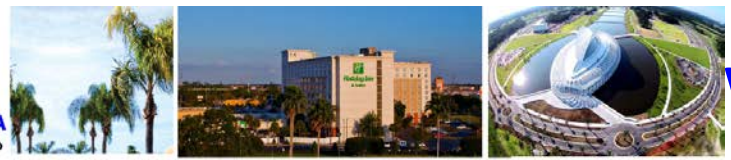


*2<sup>nd</sup> Place Winner*

## ID 262 Lean Construction Analysis of the Interior Project

Dinda Ayu Nawangsasi and Zulfa Fitri Ikatrinasari,  
Departement of Industrial Engineering

Universitas Mercu Buana, DKI Jakarta, Indonesia



# Master Thesis Competition

*3<sup>rd</sup> Place Winner*

## ID 185 Supply Chain Coordination Under Retail Competition: Literature Review and Research Opportunity

Dewi Rahmasari and Niniet I. Arvitrida  
Department of Industrial Engineering  
Institut Teknologi Sepuluh Nopember (ITS)  
Surabaya, Indonesia



# Master Thesis Competition

*3<sup>rd</sup> Place Winner*

## ID 191 Evaluation of The Implementation of Construction Safety Management System During The COVID-19 Pandemic in Rental Apartment Construction Projects to Improve Construction Safety Performance

Muhammad Indra Nur Pratama and Yusuf Latief, Department of Civil Engineering, University of Indonesia, Depok, West Java, Indonesia



*First Place Winner*

## ID 482 Integrated Agent-Based Simulation, Machine Learning, and Optimization of the Urban Food-Energy-Water Nexus and Incorporating Renewable Electrification, and Micro Supply Chains

Marwen Elkamel and Luis Rabelo

Industrial Engineering & Management Systems Department,  
University of Central Florida, Orlando, FL, USA





# Doctoral Dissertation Competition



*3<sup>rd</sup> Place Winner*

## ID 113 Preoperative Predictors for 30-day Postoperative Emergency Department Visit after a Bariatric Surgery

Pawan Bhandari and M. Affan Badar, Department of Applied Engineering and  
Technology Management, Indiana State University, IN, USA

Christopher Kluse, College of Technology, Architecture and Applied Engineering,  
Bowling Green State University, Bowling Green, OH, USA

Suhansa Rodchua, School of Technology Graduate Programs, University of Central  
Missouri, Warrensburg, MO, USA





## *First Place Winner*

### **ID 151 Competence management in Industry 4.0: An innovative concept to support a Skill@Mgmt 4.0 tool**

Tiago Bastos and Juliana Salvadorinho, Department of Economics, Management, Industrial Engineering and Tourism (DEGEIT), University of Aveiro, Aveiro, Portugal

Andreia Vitória, Department of Economics, Management, Industrial Engineering and Tourism (DEGEIT), Research unit in Governance, Competitiveness and Public Policies (GOVCOPP), University of Aveiro, Aveiro, Portugal



## *2nd Place Winner*

# **ID 520 Effects of Academic Workload on the Burnout of Students during Online Learning**

Ma. Janice J. Gumasing, Christian Jay E. Sesnorio, Henrie Louis P. Subido and Charles Kristian K. Ilo, School of Industrial Engineering and Engineering Management, Mapua University, Muralla St., Intramuros, Manila, Philippines



## *3rd Place Winner*

### **ID 120 Reducing the Ergonomic Risk Level in the Production Area of a Manufacturing Company**

Arturo Realyvásquez-Vargas, Karina Cecilia Arredondo-Soto, Guadalupe Hernández-Escobedo, Departamento de Ingeniería Industrial Tecnológico Nacional de México/Instituto Tecnológico de Tijuana, Tijuana, Baja California, Mexico

Jorge Luis García Alcaraz, Department of Industrial Engineering and Manufacturing, Autonomous University of Ciudad Juárez, Ciudad Juárez, Chihuahua, Mexico

Cuauhtémoc Sánchez Ramírez, Division of Research and Postgraduate Studies, Tecnológico Nacional de México/Instituto Tecnológico de Orizaba Orizaba, Veracruz, Mexico



## *1st Place Winner*

### **ID 651 Applying Lean Six Sigma to Enhance the Medical devices Repair Process in Public Healthcare Sector in Egypt**

Lina El-Sherif Ismail, Assistant Professor, Department of Industrial and Management Engineering, Arab Academy for Science Technology & Maritime Transport (AASTMT), Alexandria, Egypt

Heba Elhaddad, Assistant Professor, Department of Industrial Engineering, Alexandria Higher Institute of Engineering and Technology (AIET), Alexandria, Egypt

Mohamed S. Saleh, Military Technical College, Egyptian Armed Forces, Cairo, Egypt

Ayman A. Nassar, Medical Services Administration, Egyptian Armed Forces, Cairo, Egypt

Ahmed A Mohamed, Director, Solutions Engineering, Healthcare System



## *2nd Place Winner*

# **ID 266 Improving Patient Experience and Processing Times in a Major Metropolitan Hospital Through the Application of a Lean Six Sigma Methodology**

Michael Sedlack, Department of Electrical and Computer Engineering, University of Central Florida, Orlando, USA

Chirag Merchant, Ismael Hussein, Matthew Kenney, Nathan O'Brien, and Thomas Strock, Department of Industrial Engineering and Management

Systems, University of Central Florida, Orlando, Florida, USA



## *3rd Place Winner*

### **ID 238 Failure Analysis Process Leadtime Reduction in a Manufacturing Company through Eliminate, Combine, Re-arrange, and Simplify (ECSR) Concept**

Gerlyn Calica Altes, Klint Allen A. Mariñas, Michael N. Young, and Yogi Tri Prasetyo, School of Industrial Engineering and Engineering Management, Mapúa University, Manila, Philippines

Klint Allen A. Mariñas and Yung-Tsan Jou, Department of Industrial and Systems Engineering, Chung Yuan Christian University, Taiwan

Reny Nadlifatin, Department of Information Systems, Institut Teknologi Sepuluh November, Kampus ITS Sukolilo, Surabaya, Indonesia



# High School STEM Competition



*1st Place Winner*

## ID 665 The Relationship Between Achievement in and Attitude toward Mathematics in the Digital Age

Alina Zhong

Stanford Online High School

California, USA



# High School STEM Competition



*2nd Place Winner*

## ID 581 Design a Digital Music Melody Hearing Test

Mason Chen

Stanford Online High School

San Jose, CA, USA



# High School STEM Competition

*3<sup>rd</sup> Place Winner*

## ID 563 Widget Design Project (Extended Fighting Glove)

Zaeed Saif

Washtenaw Technical Middle College  
Ann Arbor, Michigan, United States



# Innovative Idea Competition



*Winner*

## ID 8 A Design, Verification, and Testing (DVT) Protocol for a Detection System of Acoustic Signals

Sarah Ali, Clinical Assistant Professor

Department of Engineering

Loyola University Chicago, Chicago, Illinois, USA



# Simulation Competition



*1st Place Winner*

## ID 338 Machining process optimization using simulation in Flexsim

Renan Pontes, Samuel Francisco das Virgens, Talia Pontes, Rodrigo Luiz Gigante and Henrique Ewbank, Facens University, Sorocaba, São Paulo, Brazil



# Poster Competition



*1<sup>st</sup> Place Winner*

## ID 322 Mathematical Analysis of Self-Heating in Materials with High Dissipation

Irina Viktorova, Leo Rebholz, and Victoria Luongo, School of Mathematical and Statistical Sciences, Clemson University, South Carolina, USA

Abdullah Kose, Graduate Student, Department of Automotive Engineering, Clemson University, Clemson, South Carolina, USA



# Poster Competition



*2<sup>nd</sup> Place Winner*

**ID 433      Development Food Healing Application Based on Mood Identification Using Intelligent Automatic Heartbeat Recognition System**  
Nicholas Jason Antonio, Yosse Ricardo Nobel, and Winda Astuti, Automotive and Robotics Program, Computer Engineering Department  
BINUS ASO School of Engineering  
Bina Nusantara University, Jakarta, Indonesia



**Winner**

# ID 99 Pharmaceutical Warehouse Product Flow Optimization

Hecyaliz Rubero, Leslie Ann Feliciano, Abneris Ayala and Jannette Pérez-Barbosa

Department of Engineering

Universidad Ana G. Méndez, Gurabo, Puerto Rico, USA



*First Place Winner*

## ID 603 Risk Factors Analysis in Apparel Supply Chain Management

Md Mamunur Rashid and Mohammed Raihan Uddin  
Department of Industrial & Production Engineering  
Bangladesh University of Textiles, Dhaka, Bangladesh



# COVID Data Analytics Competition

*First Place Winner*

## ID 247 Construction Company Performance Trends during the Covid-19 Pandemic

Andie M. Endrijatno and Isti Surjandari  
Industrial Engineering Department  
Universitas Indonesia, Jakarta, Indonesia



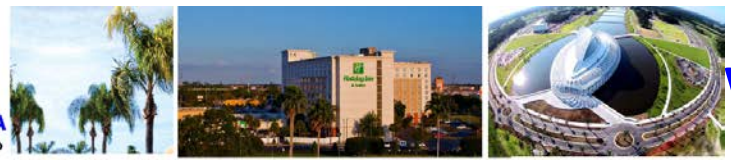
# COVID Data Analytics Competition



*2nd Place Winner*

## ID 492 Development of COVID-19 Regional Forecast Models Using Machine Learning Approaches

Md Mamunur Rashid and Ben D. Sawyer, Department of  
Industrial Engineering and Management Systems, University of  
Central Florida,  
Orlando, Florida, United States



# Undergraduate Student Paper Competition Sponsored by SIEMENS



**First Place Winner**



**Onsite**

## **ID 457 Applicationo of The Bpm-Kraljic Model to Improve Supply Management in An Agroindustrial Mse**

Ljubica Kovac-Alvarado and Camila Rivera-Gómez, Thesis writers, Universidad de Lima, Lima, Perú

Edilberto Miguel Avalos Ortecho, Professor, Department of Industrial Engineering, Universidad de Lima, Lima, Perú



# Undergraduate Student Paper Competition Sponsored by SIEMENS



**2nd Place Winner**



**Onsite**

**ID 73 A Case for Solar Energy System Dashboards to Validate Performance Warranties**

Amaya McNealey, College of Engineering

North Carolina Agricultural and Technical State University, Greensboro, NC, USA

Esteban A. Soto and Lisa B. Bosman

Purdue Polytechnic Institute, Purdue University, West Lafayette, IN, USA



## *First Place Winner*

### Onsite

## **ID 490 Application of Network Models to Assist in Data Science Curriculum Using Program and Course Learning Outcomes**

Orel Yoshia, Graduate Program in Computer Science – Data Science, Florida Polytechnic University, Lakeland, Florida,

Dr. Reinaldo Sanchez-Arias, Assistant Chair Department of Data Science and Business Analytics, Assistant Professor of Data Science, Florida Polytechnic University, Florida, USA

Dr. Shahram Taj, Chair and Professor, Department of Data Science & Business Analytics, Florida Polytechnic University, Lakeland, Florida, USA



**2nd Place Winner**

**Onsite**

## **ID 81 Fine-Tuning the Parameters for Solving the Multi-Objective D-FACTS Optimal Allocation Problem**

Eduardo Castillo Fatule, Department of Industrial, Manufacturing and Systems Engineering,  
The University of Texas at El Paso, Texas, USA

Yuanrui Sang, Department of Electrical and Computer Engineering, The University of Texas at  
El Paso, El Paso, TX, USA

Jose Espiritu, Department of Mechanical and Industrial Engineering, Texas A&M University,  
Kingsville, Texas, USA



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**3rd Place Winner**

**Onsite**

**ID 50 Holistic QA: Software Quality Assurance for the Machine Learning Era**

Shane Downing and M. Affan Badar

Department of Applied Engineering and Technology Management

Indiana State University, IN, USA



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## 2<sup>nd</sup> Place Winner

### Onsite

ID 514      Product Development by Means of Industrial-Design Structure (IDeS) Method. Studies for Future Mobility Solutions  
Christian Leon-Cardenas, Leonardo Frizziero, Giulio Galiè, Department of Industrial Engineering, Alma Mater Studiorum University of Bologna  
Viale Risorgimento, Bologna, Italy



*3rd Place Winner*

# Onsite

## ID 554 Case Study on Using a Time Study Project to Improve Manufacturing Efficiency and Safety

Dr. Mahmoud Al-Odeh, Professor, School of Technology  
Bemidji State University, Bemidji, MN, USA



*Winner*

## Onsite

**ID 345 Marketing Sustainability Investment**  
Wenqing Zhang, Yorkville University, Canada



# Doctoral Dissertation Competition



**Winner**

**Onsite**

## **ID 346 Navigating with Sharks: How the Persuasive Usability Framework Help To Create Successful Phishing Emails**

**Erica Castilho-Grao, Graduate Researcher, Department of Industrial Engineering and Management Systems, University of Central Florida  
Orlando, Florida, USA**



# See you in Houston 2023

## 8th North American Industrial Engineering and Operations Management Conference Houston, Texas, June 13-15, 2023

**Host:**

Texas A&M Engineering Experiment Station Institute of Manufacturing Systems (TEES-IMS)

**Conference Chair:**

Dr. Satish Bukkapatnam, Rockwell International Professor and Director, TEES Institute for Manufacturing Systems, Texas Engineering Experiment Station, College Station, Texas, USA

