

NEO 2019, Program at a Glance

Timeline	Day 1: September 18	
08:00-09:00	Registration	
09:00-09:15	Opening	
09:15-10:00	<i>Deep Learning: an Introduction</i>	by Mario Castelán
10:00-11:00	<i>An Integrated View of Selection in Evolutionary Algorithms</i>	by Carlos Fonseca
11:00-11:20	Group photo	
11:20-11:40	Coffee break	Opportunities for studying at Cinvestav
11:40-12:00		
12:00-12:20	Women at NEO (39,41,25,40)	Robotics I (3,28,30,31)
12:20-12:40		
12:40-13:00		
13:00-13:20		
13:20-14:40	Lunch break	
14:40-15:00	<i>Network Synchronization of Dynamical Systems:</i>	
15:00-15:20	<i>from Static to Dynamic Coupling</i>	
15:20-15:40	by Jonatán Peña	
15:40-16:00	Women at NEO: Round Table	
16:00-16:20		
16:20-16:40	Coffee break	
16:40-17:00	Energy Sector I (15, 16, 24)	Stochastic Methods and Chaos (38,12,34)
17:00-17:20		
17:20-17:40		

Timeline	Day 2: September 19	
09:00-10:00	<i>Convolutional Neural Networks for Intelligent Unmanned Aerial Systems</i> by José Martínez	
10:00-11:00	Tutorial by J. Martínez: <i>Rapid Algorithm Development for Drones using Gazebo and ROS</i>	Tutorial by C. Fonseca: <i>The Attainment Function Approach to Performance Evaluation in Evolutionary Multiobjective Optimization</i>
11:00-11:20	Coffee break	
11:20-11:40	Tutorial by J. Martínez:	Tutorial by C. Fonseca: <i>The Attainment Function</i>
11:40-12:00	<i>Rapid Algorithm Development</i>	<i>Approach to Performance Evaluation in Evolutionary</i>
12:00-12:20	<i>for Drones using Gazebo and ROS</i>	<i>Multiobjective Optimization</i>
12:20-12:40	Coffee break	
12:40-13:00	<i>A novel multi-objective evolutionary algorithm with fuzzy logic</i>	
13:00-13:20	<i>based adaptive selection of operators: FAME</i>	
13:20-13:40	by Héctor Fraire-Huacuja	
13:40-15:00	Lunch break	
15:00-15:20	Hybrid Methods (5,7,8,22)	Robotics II (10, 13)
15:20-15:40		Energy Sector II (26,27)
15:40-16:00		
16:00-16:20		
16:20-16:40	Coffee break	
16:40-17:00	Multi-objective Optimization I (4,6,9)	Discrete Optimization (11,20,32)
17:00-17:20		
17:20-17:40		
20:00-22:00	Gala dinner	

Timeline	Day 3: September 20	
09:00-10:00	<i>New Hybrid Optimization Methods for Bin-packing Problems</i> by Laura Cruz Reyes	
10:00-11:00	Tutorial by G. Arechavaleta: <i>Direct Collocation and Geometric Methods for Robot Trajectory Optimization</i>	Multi-objective Opt. II (14,21,23)
11:00-11:20	Coffee break	
11:20-11:40	Tutorial by G. Arechavaleta:	Applications (33,35,37)
11:40-12:00	<i>Direct Collocation and Geometric Methods</i>	
12:00-12:20	<i>for Robot Trajectory Optimization</i>	
12:20-12:40	Coffee break	
12:40-13:00	Vision and Navigation (17,18,19,29)	
13:00-13:20		
13:20-13:40		
13:40-14:00		
14:00-14:20	Closing session	

Special Sessions

Wednesday Sept., 18

Women at NEO

- 39 America Morales
Mobile Robotics And Control
- 41 Dulce Flores-Renteria
Structural Equation Models as a Tool For the Analysis Of Complex Phenomena in the Soil
- 25 Dania Gutiérrez
Connecting Brains and Robots with Noninvasive Interfaces
- 40 Adriana Lara
Memetic Algorithms for Multi-Objective Optimization

Robotics I

- 3 Josue Gómez, America Morales and Chidentree Treesatayapun
Artificial Neural Network Controller Design Based on Pseudo Jacobian Matrix for Robotic System
- 28 Luis Enrique Hernández Sánchez, Gustavo Arechavaleta Servín and América Berenice Morales Díaz
Establishing Consistent Contact Forces for Multi-Robot Cooperative Task with QP
- 30 Orlando Reyna-Mireles, Gustavo Arechavaleta and Mario Castelán
Reinforcement Learning for the Lane Following Problem with a Simulated Autonomous Car
- 31 Jonathan Obregón, Gustavo Arechavaleta and América Morales
Fast Computation of Hierarchical Inverse Dynamics Control

Special Sessions

Wednesday Sept., 18

Energy Sector I

- 15 Xiaoming Bai, Furui Xiong and Honglei Ai
The Optimization Method for Nuclear Piping System
- 16 Bihao Wang, Furui Xiong, Qian Huang and Haiyang Song
Optimal Design of DVA for Vibration Reduction of Piping System
- 24 María De Los Ángeles Gómez López and Josué Enríquez Zárate
Aerodynamic and Modal Analysis of Wind Turbine Blade Caused by the Effect of Erosion

Stochastic Methods and Chaos

- 38 Dulce Martinez-Peon, Roberto Lara-Villanueva, Marco Ivan Ramirez Sosa Morán, Laura Gomez-Sanchez, Angela Benavides-Rios and Francisco Gerardo Benavides-Bravo
Characterization of Motor Imagery Paradigm for Wrist and Forearm Using an Algorithm Based on the Hurst Exponent
- 12 Jesús-Adolfo Mejía-de-Dios and Efrén Mezura-Montes
Pseudo-Feasible Solutions: a Warning Sign for Evolutionary Computation in Bilevel Optimization
- 34 Reynaldo Domínguez-Castillo and Nicandro Cruz-Ramirez
Gibbs Sampling as Sampling-Based Method in Imbalanced Learning

Special Sessions

Thursday Sept., 19

Hybrid Methods

- 5 Oliver Cuate, Lourdes Uribe, Adriana Lara, Oliver Schuetze, Antonin Ponsich and Saul Zapotecas
A New Hybrid Evolutionary Algorithm for the Treatment of Equality Constrained Mops
- 7 Lourdes Uribe, Günter Rudolph, Adriana Lara and Oliver Schuetze
 Δ_p -Newton Method for Unconstrained Optimization
- 8 Lourdes Uribe, Adriana Lara, Kalyanmoy Deb and Oliver Schuetze
A Novel Gradient Free Local Search Operator for Constrained Multi-objective Optimization
- 22 Oliver Schuetze
Multi-objective Evolutionary Algorithms from the Mathematical Programming Point of View

Robotics II

- 10 Luis Gerardo De La Fraga
Robot Arm Motion Planning with a Multi-Objective Algorithm
- 13 Jesús Savage, Stalin Muñoz, Marco Negrete and Carlos Rivera
Robotics State Machine Behaviors Derived with Genetic Algorithms

Special Sessions

Thursday Sept., 19

Energy Sector II

- 26 Javier Carmona, Leonardo Trujillo and Josué Zárate
Machine Learning, Fault Detection in Wind Turbine Blades And Related Databases: a Review of the State-of-the-Art
- 27 Josué Enríquez-Zárate, Perla Juarez-Smit, Javier Carmona and Salvador de Lara
Modeling of the Dynamic Response in a Gas Turbine Using Experimental Vibrations with Machine Learning

Multi-objective Optimization I

- 4 Oliver Cuate and Oliver Schütze
Pareto Explorer for finding the Knee for Many Objective Optimization Problems
- 6 Oliver Cuate, Lourdes Uribe, Adriana Lara and Oliver Schuetze
A Benchmark for Equality Constrained Multi-objective Optimization
- 9 María Fernanda Beltrán Llorente and Oliver Schütze
The Pareto Tracer for General Inequality Constraints

Discrete Optimization

- 11 José Manuel Muñoz Contreras, Daniel Eduardo Hernández Morales, José Juan Tapia Armenta and Leonardo Trujillo
Implementation of Genetic Programming with Geometric Semantic Operators in GPU
- 20 Blanca Cecilia López-Ramírez and Nareli Cruz Cortés
A Multi-Objective Design for Finding High Nonlinearity S-boxes
- 32 David Martínez-Galicia, Efrén Mezura-Montes and Alejandro Guerra-Hernández
Analysis of Differential Evolution variants for parameter tuning of Decision Trees inductive algorithms

Special Sessions

Friday Sept., 20

Multi-objective Optimization II

- 14** Teodoro Macias-Escobar, Laura Cruz-Reyes and Bernabe Dorronsoro
Application of Multiple Preference Incorporation Approaches to Solve Dynamic Multi-Objective Optimization Problems
- 21** Luis Torres-Treviño and Luis Marquez-Vega
Multi-objective Optimization of a Flock of Robots for Location Tasks
- 23** José Manuel Ortiz-Salazar, Saúl Zapotecas-Martínez and Abel García-Nájera
Multi-Objective Optimization using Decomposition: The Case of the Whale Optimization Algorithm

Applications

- 33** Andrea Padilla, Diana Gamboa Loaiza, Paul J. Campos, Jose R. Cardenas-Valdez and Carlos E. Vázquez-López
Nonlinear Analysis for a Type-1 Diabetes Model Focus on T and Beta Cells Behavior
- 35** José Cárdenas, Everardo Inzunza-González, Manuel De J. García-Ortega, Andres Calvillo Téllez and J. C. Núñez-Pérez
Hardware Implementation of the Phase Distortion to Amplitude Conversion Algorithm Applied for a 1.84-Ghz PA
- 37** Juan Gabriel Ruiz and Oliver Schüetze
The Design of Graphical User Interfaces through Automatic Optimization Methods: A Review of the State of the Art

Special Sessions

Friday Sept., 20

Vision and Navigation

- 17** Luis Gerardo De La Fraga, Sergio Albeto Herrera Castro and Ernesto Olguín Díaz
Visual--Inertial Odometer with a Marker
- 18** Luis Gerardo De La Fraga and Michel Torres Alonso
Augmented Interaction with a Deformable Object
- 19** Pablo Arturo Martinez
Camera-Radar Data Fusion for Traffic Participants Detection in Intelligent Intersection System
- 29** Carlos Acuña, Mario Castelán and Gustavo Arechavaleta
A New Probabilistic Segmentation Method of Lanes for Autonomous Vehicles