



Day 1, September 03, 2024 (RED and Tutorials)

"(V)" denotes virtual participation

08:00 — 09:00	Registration
09:00 — 09:15	Opening
09:15 — 10:00	Bio-inspired Metaheuristics for Optimization: The Last Frontier Dr. Carlos Coello
10:00 — 10:20	Coffee break
10:20 — 10:50	Overview of Discrete Optimization Dr. Laura Cruz
10:50 — 11:20	Overview of Continuous Optimization Dr. Miriam Pescador
11:20 — 12:20	Job Opportunities in Academia and Industry Participants: Dr. Oliver Cuate (IPN - ESFM), Dr. Laura Cruz (TecNM Madero), Dr. Miriam Pescador (IPN - ESCOM), Dr. Carlos Coello (Cinvestav), David Laredo (Amazon), and Xavier Esquivel (Oracle)
12:20 — 12:40	Coffee break
12:40 — 13:40	Admission Requirements (IPN, Cinvestav, ITT, UV) Questions and Answers
13:40 — 14:00	Group Photo
14:00 — 15:00	Lunch and Poster Session
15:00 — 18:00	Tutorials (free access for all RED and NEO attendees)

Day 2, September 04, 2024

08:00 — 09:00	Registration
09:00 — 09:30	Opening
09:30 — 10:50	Session I (EMO1, 4 talks, Auditorium Jose Adem) Chair: Efren Mezura-Montes <ul style="list-style-type: none"> • Hypervolume Gradient Subspace Approximation Ke Shang (V) • Optimizing Recoverable Robustness of Power Distribution Networks Michael Emmerich (V) • A Novel Framework for Multi-objective Algorithms by Means of Hausdorff Approximations Carlos Hernández • Hypervolume Indicator Gradient and Hessian: Analytical Expressions and Algorithms Hao Wang (V)
10:50 — 11:10	Coffee break
11:10 — 12:10	Keynote I, Kalyanmoy Deb Evolutionary Multi-objective Optimization for Practicalities
12:10 — 12:20	Group Photo
12:20 — 13:10	Poster session (see last page for details)
13:10 — 13:40	Lunch break
13:40 — 14:40	Session II (EMO2, 3 talks, Auditorium Jose Adem) and Session III (AML1, 3 talks, Aula A)
Session II	Chair: Oliver Schütze <ul style="list-style-type: none"> • Finding ε-locally Optimal Solutions for Multi-objective Multimodal Optimization Angel E Rodriguez-Fernandez • Resolving Contrast and Detail Trade-Offs in Image Processing with Multi-Objective Optimization Daniel Molina-Pérez • Multi-Objective Harmony Search Algorithm with Improved Harmony Creation Alfredo Peña-Ramos (V)
Session III	Chair: Daniel E Hernández <ul style="list-style-type: none"> • TaePredict to Forecasting Time Series based on Threshold Accepting Algorithms Juan Frausto Solis (V) • Classification of Scientific Texts via Support Vector Machines. Case Study Texts on Cybersecurity 2018 to 2023 Javier Isaac Cázares Vieyra

- Evaluation of Machine Learning Methods for Temperature Prediction in Mexican Regions

Erika Alarcon-Ruiz (V)

14:50	Transportation to hotel
16:20	Transportation to gala dinner
22:00	Transportation to hotel

Day 3, September 05, 2024

- 09:00 — 09:30 Registration
- 09:30 — 10:30 Keynote II, **Laura Cruz Reyes**
Innovating Multiobjective Optimization with Machine Learning
- 10:30 — 10:50 Coffee break
- 10:50 — 11:50 Session IV (Opt.Ind.1, 3 talks, Auditorium Jose Adem) and Session V (AML2, 3 talks, Aula A)
- Session IV** Chair: Oliver Cuate
- Backup Solutions for the Refueling Problem in Foreign Transportation: A Case Study in Mexico
Rubén Z Belmont
 - Parameter Estimation on *Kluyveromyces Marxianus* Strains through Computational Modelling and Nonlinear Regression
Emmanuel Rodriguez
 - Improving Wind Speed Forecasts in the State of Michoacan through Dynamical Downscaling
Maritza Bernabe (V)
- Session V** Chair: Daniel E Hernández
- Cloud Computing to Accelerate Research: Bridging the Gap Between Experiments and Prototypes
David Laredo Razo
 - Validation of Wind Speed Forecasts Developed With the Weather Research and Forecasting model
Damian Campuzano Milian (V)
 - AI-Driven Data Interaction: Pioneering Innovation with Secure, Seamless Enterprise Integration
Roman Pineda Soto (V)
- 11:50 — 12:10 Coffee break
- 12:10 — 13:10 Session VI (AWS, 1 talk, Auditorium Jose Adem) and Session VII (HHO, 3 talks, Aula A)
- Session VI** Chair: Daniel E Hernández
- Introduction to AWS
David Laredo
- Session VII** Chair: Octavio Ramos-Figueroa
- A Hyper-Heuristic Approach for Diversity Control of Grouping Genetic Algorithms
Octavio Ramos-Figueroa
 - New Metaheuristics to Solve the Internet Shopping Optimization Problem with Sensitive Price
Miguel Garcia (V)
 - Exploring the Synergy between M3GP and t-SNE for Enhanced Multiclass Classification
Luis Muñoz (V)

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- 13:10 — 15:10 Lunch break / Workshop "Generative Artificial Intelligence with AWS" (Auditorium Jose Adem)
- 15:10 — 16:10 Session VIII (Disc.Opt., 3 talks, Auditorium Jose Adem) and Session IX (GP-EML, 3 talks, Aula A)
- Session VIII** Chair: Marcela Quiroz
- A Mixed Integer Programming Approach for the Unequal Area Facility Layout Problem
Saúl Domínguez Casasola (V)
 - Optimization of Generalized Assignment Problem for a Machinery-Aided Composting Process
Lourdes Uribe
 - Online Selection of Mutation Operators for the Grouping Genetic Algorithm with Controlled Gene Transmission for the Bin Packing Problem
Stephanie Amador Larrea
- Session IX** Chair: Leonardo Trujillo
- M5GP: Parallel Multidimensional Transformation for Symbolic Regression
Luis A Cardenas Florido
 - Understanding the COVID-19 dynamics in Mexico trough mathematical modelling, biostatistics and in silico experimentation
Paul A Valle
 - Fuzzy Grammatical Evolution
Enrique Naredo (V)
- 16:10 — 16:30 Coffee break
- 16:30 — 18:30
- Tutorial: Archiving in Evolutionary Multi-objective Optimization (Jose Adem)
Oliver Schütze
- 16:30 — 18:30
- Tutorial: Variation Operators for Grouping Genetic Algorithms (Aula A)
Marcela Quiroz-Castellanos and Octavio Ramos Figueroa
- 19:00 — 21:00 Women at NEO

Day 4, September 06, 2024

- 09:00 — 10:00 Keynote III, **Ting Hu (V)**
Simplicity Bias and Neutrality in Genetic Programming
- 10:00 — 10:20 Coffee break
- 10:20 — 11:20 Session X (CV1, 3 talks, Auditorium Jose Adem) and Session XI (AML3, 4 talks, Aula A)
- Session X** Chair: Luis Gerardo de la Fraga
- Spiking Neurons Performing Image Processing Tasks
Luis Gerardo de la Fraga
 - A Real-world Dataset for Analyzing Cultured Fish Behavior
Osbaldo Aragón-Banderas
 - Multiclass Evaluation of Vision Transformers for Industrial Defect Detection
Ricardo Rioda Santiago
- Session XI** Chair: Daniel E Hernández
- Graph-based Representation of a Problem Set Using the Optimal Transport Dataset Distance
Joel L Nation
 - Analysis of GUIs from a Gender Perspective for their Characterization through Pattern Recognition
Paulo César Portilla-Tirado
 - Feature Extraction Toolkit for Multi-channel Signal Classification
Daniel E Hernandez
 - YOLO versions analysis for detection of types and subtypes in images
Alan González Hernández
- 11:20 — 11:40 Coffee break
- 11:40 — 12:40 Session XII (Model, 3 talks, Auditorium Jose Adem) and Session XIII (CV2, 3 talks, Aula A)
- Session XII** Chair: Leonardo Trujillo
- Thau Observer for Insulin Estimation Considering the Effect of Beta-cells Dynamics for a Diabetes Mellitus Model
Diana Gamboa
 - Evolutionary algorithm and EEG classification for the detection of mental states
Pierrick Legrand (V)
 - Consistent Conjectural Variations Equilibrium for a Human Migration Model
Daniela Osorio Gonzalez
- Session XIII** Chair: Lourdes Uribe
- Automatic Detection of Fiducial Markers with Yolo v5 Deep Network
Luis Gerardo de la Fraga
 - Facial emotion recognition by means of convolutional neural networks for estimating ergonomic measures
Israel Cordova

- An Enhanced Image Segmentation Algorithm Inspired by Mean Shift and Particle Swarm Optimization
Luis Fernando Hernandez Bravo

12:40 — 13:00 Closing

Poster session, September 04, 2024

- A Newton Method for Hausdorff Approximations of the Pareto Front within Multi-objective Evolutionary Algorithms
Oliver Schütze
- RSG, a Method for Pareto Front Approximation and Reference Set Generation
Angel E Rodriguez-Fernandez
- On Objective Reduction of Many-objective Optimization by Means of Performance Indicators
Fernando Avitúa Varela
- A R2 Based Multi-objective Reinforcement Learning Algorithm
Sofia Magdalena Borrel Miller
- The Pareto Tracer for the Treatment of Degenerated Multi-objective Optimization Problems
Oliver Cuate
- Multiobjective Reinforcement Learning for Water Distribution Network Control
José A Alonso
- Characterization and Classification of Mexican Woods by Local Texture Analysis Using Deep Learning Techniques
Juan Pablo Garduza Ventura
- Analysis and Characterization of Digital Images of Land Surface in the Middle Zone of the Mexican State of San Luis Potosi, by Means of CBIR Technique and Evolutionary Computation for Fire Risk Assessment
José Rodrigo Torres Licona
- Comparison of Multi-objective Evolutionary Algorithms for Fine-tuning a Quantile Forecasting Deep Neural Network
Daniel Linares Gil
- Lightly Robust Solutions for MOGenConVRP under Uncertainty
Rodrigo Fernando Velázquez Cruz
- Expected Hypervolume Improvement for Multi-Objective Reinforcement Learning
Alberto M Millán
- When does Weighted Sum Perform Well on Multi-task Learning?
María Carmen Aguirre Delgado
- On the Effect of Temporal Heterogeneity on Selection Pressure of Evolutionary Algorithms
Victor Manuel Sanchez Sanchez
- A Preliminary Study of Collaborative Multi-objective Multi-agent Systems by Means of SAC and PPO

José Olivas Díaz

- Preliminary Exploration of Hyperparameter Tuning in Superiorization Technique

Luz Itzel Valdeolivar-Hernández

- Fiducial Markers Detection with Deep Networks

Christian Ruiz Hernández

- Comparative Analysis of Traditional and Deep Machine Learning Algorithms Applied to Image Classification

Balam García Morgado

- Anomaly Detection Using Autoencoders with Echo State Neural Networks

Andres Cureño Ramírez

- Swarm-Based Training to Optimize Hyperparameters in Reinforcement Learning Environments

Jorge A Calvillo