



## 23rd Mexican International Conference on Artificial Intelligence



All presentations are of 30 minutes including questions

\*\*\*\* ALL TIMETABLES ARE EXPRESSED IN CDMX TIME

	ROOM 1 Information Center Auditorium	ROOM 2 Educational Auditorium	ROOM 3 Room 8301	ROOM 4 Chavira Room	
<b>Day 1 – Monday, October 21st</b>					
Time					TUTORIALS & WORKSHOPS (DAY 1)
09:00 - 10:00					
10:00 - 11:00					
11:00 - 12:00					
12:00 - 13:00	<b>XVII Workshop on Hybrid Intelligent Systems (HIS 2024)</b> Chairs: Martin Montes & Carlos Alberto Ochoa  <i>Information Center Auditorium</i>		<b>XVII Workshop on Hybrid Intelligent Systems (HIS 2024) Poster Session</b>  Chairs: Martin Montes & Carlos Alberto Ochoa  <i>Room 8301</i>	<b>XVII Workshop on Intelligent Learning Environments (WILE 2024)</b> Chair: Lucía Barrón  <i>Virtual</i>	
13:00 - 14:00	Lunch (Free time)				
14:00 - 15:00					
15:00 - 16:00	<b>Tutorial 1: Knowledge Summarization : Build your own research assistant with an LLM</b> J.Francisco Munoz-Elquezabal Mathematics and Physics, ITESO  <i>Information Center Auditorium</i>	<b>Tutorial 2: MLOps for Medical Imaging Made Easy</b> Ivan Reyes-Amezcuca, Alexis Ivan López Escamilla, Gilberto Ochoa-Ruiz, Gerardo Rodríguez-Hernández CINVESTAV Computer Science, ITESM School of Engineering and Sciences Educational Auditorium	<b>Tutorial 3: MySQL para la Logística Inteligente</b> Alberto Ochoa Zezzatti Departamento de Ingeniería Industrial  <i>Room 8301</i>	<b>Tutorial 4: Stock Portfolio Optimization using Python</b> Ismael Medina Muñoz Industry Solutions Delivery, Microsoft  <i>Chavira Room</i>	
16:00 - 17:00					
17:00 - 18:00					
18:00 - 19:00					
<b>Day 2 – Tuesday, October 22nd</b>					
Time					TUTORIALS & WORKSHOPS (DAY 2)
09:00 - 10:00					
10:00 - 11:00					
11:00 - 12:00	<b>International Workshop on Intelligent Drones</b> Chair: José Martínez-Carranza  <i>Information Center Auditorium</i>	<b>Tutorial 5: How can a Data-driven and AI-driven Model be Developed to Predict Early Student Dropout in Higher Education?</b> Joanna Alvarado Uribe, Paola Mejía, Ubaldo Martínez Living Lab & Data Hub, Institute for the Future of Education, Tecnológico de Monterrey Educational Auditorium	<b>6th Workshop on New Trends in Computational Intelligence and Applications (CIAPP 2024)</b> Chair: Efrén Mezura  <i>Room 8301</i>	<b>Doctoral Consortium</b> Chairs: Hugo Jair Escalante Balderas & Miguel Gonzalez Mendoza  <i>Chavira Room</i>	
12:00 - 13:00	Lunch (Free time)				
13:00 - 14:00					
14:00 - 15:00					
15:00 - 16:00	<b>Tutorial 7: Implementaciones de modelos open source de deep learning para el entorno de investigación</b> Yaxk'in U Kan Coronado González Universidad La Salle México  Educational Auditorium	<b>Tutorial 8: Anomaly detection by means of unsupervised machine learning algorithms</b> Antonio Neme Castillo IIMAS UNAM  <i>Room 8301</i>	<b>Tutorial 9: Developing AI Applications Using Prompts: Simplifying Artificial Intelligence</b> José Alfredo Arriaga Rosillo Universidad La Salle Bajío  <i>Chavira Room</i>	<b>Tutorial 6: Exoplanetary Signal Processing using Machine Learning</b> Erika Paloma Sánchez Femat Computer Science, Instituto Politécnico Nacional Campus Zacatecas UPIIZ-IPN  <i>Room 9309</i>	
16:00 - 17:00					
17:00 - 18:00					
18:00 - 19:00					

### MAIN CONFERENCE PROGRAM OVERVIEW

	<b>Day 3 – Wednesday October 23rd</b>
Time	
09:00 - 09:30	<b>Opening Ceremony</b>  <i>Information Center Auditorium</i>
09:30 - 10:00	Coffee Break
10:00 - 11:00	<b>Keynote Talk 1: Efrén Mezura-Montes (Universidad Veracruzana)</b>  <b>Bio-Inspired Search Algorithms, History, a Little Mess, and a Brief User Guide</b>  <i>Information Center Auditorium</i>
11:00 - 11:30	Coffee Break

11:30 - 13:30	<b>23-1: Machine Learning 1</b> Session Chair:  <i>Information Center Auditorium</i>	<b>23-2: Intelligent Systems 1</b> Session Chair:  <i>Educational Auditorium</i>	<b>23-3: Bioinformatics &amp; Medical Applications 1</b> Session Chair:  <i>Room 8301</i>	<b>23-4: Natural Language Processing 1</b> Session Chair:  <i>Chavira Room</i>	<b>MAIN CONFERENCE (DAY 1)</b>
13:30 - 14:30	Lunch				
14:30 - 15:30	<b>Keynote Talk 2: Nazim Houacine (Harvard University)</b> <b>Unlocking Computer Vision Capabilities for Enhancing Precision in Surgery</b> <i>Information Center Auditorium</i>				
15:30 - 16:00	Arrival at UDLAP				
16:00 - 17:00	<b>One minute poster presentation</b> <b>UDLAP</b>				
17:00 - 19:00	<b>Poster Session &amp; Welcome Cocktail</b> <b>UDLAP</b>				

<b>Time Day 4 – Thursday October 24th</b>					
09:00 - 10:00	<b>Keynote Talk 3: Saiph Savage (Northeastern University)</b> <b>Unveiling AI-Driven Systems for a Worker-Centric Future</b> <i>Information Center Auditorium</i>				<b>MAIN CONFERENCE (DAY 2)</b>
10:00 - 10:30	Coffee Break				
10:30 - 12:30	<b>24-1: Machine Learning 2</b> Session Chair:  <i>Information Center Auditorium</i>	<b>24-2: Intelligent Systems 2</b> Session Chair:  <i>Educational Auditorium</i>	<b>24-3: Bioinformatics &amp; Medical Applications 2</b> Session Chair:  <i>Room 8301</i>		
12:30 - 13:30	<b>Keynote Talk 4: Benjamin Sánchez Lengeling (University of Toronto)</b> <b>Digitizing olfaction with AI: building the RGB of our chemical sense</b> <i>Information Center Auditorium</i>				
13:30 - 14:30	Lunch				
14:30 - 16:30	<b>24-4: Machine Learning 3</b> Session Chair:  <i>Information Center Auditorium</i>	<b>24-5: Intelligent Systems 3</b> Session Chair:  <i>Educational Auditorium</i>	<b>24-6: Bioinformatics &amp; Medical Applications 3</b> Session Chair:  <i>Room 8301</i>		
16:30 - 18:00	<b>Former Presidents Panel</b> Session Chair:  <i>Information Center Auditorium</i>				
18:00 - 19:00	Free time				
19:00 - 20:00	Arrival at Conference Dinner				
20:00 - 23:00	<b>Awards Ceremony / Conference Dinner</b> <b>(Dinner will be served promptly at 8 pm)</b> <i>Posada Señorial Hotel</i>				

<b>Time Day 5 – Friday October 25th</b>					
9:00 - 10:00	<b>25-1: Machine Learning 4</b> Session Chair:  <i>Information Center Auditorium</i>	<b>25-2: Intelligent Systems 4</b> Session Chair:  <i>Educational Auditorium</i>	<b>25-3: Natural Language Processing 2</b> Session Chair:  <i>Room 8301</i>	<b>25-4: Computer Vision &amp; Image Processing 1</b> Session Chair:  <i>Chavira Room</i>	
<b>Keynote Talk 5: Ricardo Baeza-Yates (Institute for Experiential AI of Northeastern University)</b>					

10:00 - 11:00	<b>The Limitations of Data, Machine Learning &amp; Us</b> <i>Information Center Auditorium</i>			
11:00 - 11:30	Coffee Break			
11:30 - 13:00	<b>Industrial Panel:</b> Session Chair: <i>Information Center Auditorium</i>			
13:00 - 14:00	Lunch			
14:00 - 15:00	<b>Keynote Talk 6: Edgar Suar (University of Oxford)</b> <b>SpatialAI: Towards a Single Algorithm for Intelligent Robots</b> <i>Information Center Auditorium</i>			
15:00 - 15:30	Coffee Break			
15:30 - 16:30	<b>25-5: Machine Learning 5</b> Session Chair: <i>Information Center Auditorium</i>	<b>25-6: Intelligent Systems 5</b> Session Chair: <i>Educational Auditorium</i>	<b>25-7: Natural Language Processing 3</b> Session Chair: <i>Room 8301</i>	<b>25-8: Computer Vision &amp; Image Processing 2</b> Session Chair: <i>Chavira Room</i>
16:30 - 17:00	<b>Closing Ceremony</b> <i>Information Center Auditorium</i>			
<b>Time</b>	<b>Day 6 – Saturday October 26th</b>			
10:00 - 18:00	<b>Academic activities and cultural program (Tour to "Atlixco" Magical Town)</b>			

MAIN CONFERENCE  
(DAY 3)



## 23rd Mexican International Conference on Artificial Intelligence



All presentations are of 30 minutes including questions  
DETAILED PROGRAM

### October 23rd, Wednesday Morning Opening Ceremony Information Center Auditorium

**Keynote Talk 1: Efrán Mezura-Montes (Universidad Veracruzana)**  
Bio-Inspired Search Algorithms, History, a Little Mess, and a Brief User Guide  
Information Center Auditorium

<p><b>11:30-13:30</b> <b>Parallel Session 23-1: Machine Learning 1 - Information Center Auditorium</b> <b>Session Chair:</b> * If a talk is cancelled, other talks will be moved up.</p> <p>11:30-12:00 68 Galeas Escobedo, Damián L. Garnica Towards Estimating Water Consumption 12:00-12:30 83 Díaz de León Rodríguez, Iván Zareli Talent Identification in Football Using 12:30-13:00 85 Lohrey, Artem; Penov, Aleksandr Latent State Season Quantization for 13:00-13:30 117 Hernandez Gress, Neil; Maqueo Huerta, Analysis of Predictive Factors in University</p>	<p><b>11:30-13:30</b> <b>Parallel Session 23-2: Intelligent Systems 1 - Educational Auditorium</b> <b>Session Chair:</b> * If a talk is cancelled, other talks will be moved up.</p> <p>11:30-12:00 16 Sánchez-Medel, Nohemi; Altamirano Robles, Stive transfer techniques for dermatological 12:00-12:30 35 Herrera-Semertres, Vilmi; Barrios, Lazaro; González Tax Underestimation Detection using an 12:30-13:00 20 Neme, Antonio; Martínez, Sergio; Pérez, Noa I., Unsupervised anomaly detection algorithms 13:00-13:30 33 Gallegos, Jessica; Borunda, Monica; Garduño, Raúl; Spatial intelligent estimation of energy</p>	<p><b>11:30-13:30</b> <b>Parallel Session 23-3: Bioinformatics &amp; Medical Applications 1 - Room 8301</b> <b>Session Chair:</b> * If a talk is cancelled, other talks will be moved up.</p> <p>11:30-12:00 15 Ramirez-Quintana, Juan A.; Ramirez Emotion recognition Method based on EEG 12:00-12:30 34 Khalil, Adnan Elah Khan; Pérez Díaz, Enhancing User Authentication Through 12:30-13:00 95 Ojachea, Carlos; Villaseñor-Frieda, Detecting Alzheimer's Disease Through the 13:00-13:30 110 Arellano, Vanessa; Rodríguez, From EEG Signal Acquisition and</p>	<p><b>11:30-13:30</b> <b>Parallel Session 23-4: Natural Language Processing 1 - Chavira Room</b> <b>Session Chair:</b> * If a talk is cancelled, other talks will be moved up.</p> <p>11:30-12:00 14 Avendaño Garrido, Martha L.; Torres-Moreno, Juan-Manuel; Automatic Text Summarization based on 12:00-12:30 64 Arif, Muhammad; Gellbali, Alexander; Ullah, Fida; Sobrov, Identification of Fake Users in Mobile 12:30-13:00 98 Hossain-Masud, Wendy; Garibaldo-Jerez, Vicente Samuel; Moreno RESTful API for intent recognition based 13:00-13:30 98 Gutiérrez, Hector A.; Zareli, Mahdi; de León, Alejandro Predicting the 2024 Mexican Presidential</p>
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### October 23rd, Wednesday Evening Keynote Talk 2: Nazim Houacine (Harvard University) Unlocking Computer Vision Capabilities for Enhancing Precision in Surgery Information Center Auditorium

<p><b>14:30 - 15:30</b></p>	<p><b>16:00 - 17:00</b></p>	<p><b>17:00 - 19:00</b></p>
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**One minute poster presentation**  
UDLAP

**Poster Session and Welcome Cocktail**  
UDLAP

<p>2 Saldaña Ulloa, Diego Temporal Graph Networks Applied to 4 Vilella Yula, Alejandra; Marin, Dulce Sofia; Detection and classification of brain 9 Epponen, Alex A.; Zamir, Muhammad From Simple Detection to Quality-Aware 12 Rodríguez, Ernesto D. Comparative analysis of control laws for 13 Bárcena Ruiz, Gerardo; Gil Herrera, Richard Application of Condorcet's Jury Theorem 31 Baah Caballero, César Ulises; Ambrosio Nighttime Traffic Sign Detection Using 38 Montaña, Luis; Muctrocta, Daniela M. Deep Learning-based Electrical Fault</p>	<p>46 Bravo, Carlos Lerma; Gallardo, Iván IGB; Pérez- Automatic detection of COPD through vocal 70 Maldonado-Suñeres, Christian E.; Vargas-Saenz, LLM Ontology: A Critical Component for 75 Osorio Quere, Carlos A.; Durán, Daniel; Rangel- GPU-Based Acceleration of Fast Hadamard 78 Flores Pérez, Judith M.; Gil Herrera, Richard de Jesus Digital Audits: Improving Catalog Behavior 99 Plataz, Edgar O.; Díaz, Raquel; Altamirano Robles, SS-DTL: Semantic Segmentation with Dual 101 Cruz Parada, Eli; Vivar Estudillo, Guillermina; Pérez Classification of Zika and Dengue clinical data 109 Muñoz Esquivel, J. Francisco; Arriaza, Diego The Role of Sparse Training and Evolutionary</p>	<p>118 Hernandez Gress, Neil; Mestizo, Predicting University Student Dropout with 119 Jimenez Cruz, Raúl; Ruiz-Soto, Galo; US airlines Twitter Opinion Analysis 128 Urbán, Diego Transfer Learning, Shallow and Deep Neural 129 León Navarro, Jose Antonio; Salcedo Development of an Autonomous Navigation 135 Velazquez López, Omar; Orpeza; Enhancing Music Genre Classification Using 136 Estrada Beltrán, Diego L1/MAA-Adjusted Nutritional Recipe 139 Zavala-Córdova, Ricardo A.; Rosales- Exploring Class Visualizations for Neural</p>
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### October 24th, Thursday Morning Keynote Talk 3: Ralph Savage (Northeastern University) Unveiling AI-Driven Systems for a Worker-Centric Future Information Center Auditorium

<p><b>10:30-12:30</b> <b>Parallel Session 24-1: Machine Learning 2 - Information Center Auditorium</b> <b>Session Chair:</b> * If a talk is cancelled, other talks will be moved up.</p> <p>10:30-11:00 125 Molina-Román, Yuzvick; Padilla López, Predicting and Classifying Contaminants in 11:00-11:30 137 Morales, Adrien Inaki; Iglesias, Jorge G. Low, A ConvSTN approach for the WorldClim 11:30-12:00 130 Hernández Silva, Erick; Sánchez Miranda, Building Resilience Against Climate 12:00-12:30 132. Rios Ochoa, Emilio; Chacón Ramirez, Machine Learning Approaches for Water</p>	<p><b>10:30-12:30</b> <b>Parallel Session 24-2: Intelligent Systems 2 - Educational Auditorium</b> <b>Session Chair:</b> * If a talk is cancelled, other talks will be moved up.</p> <p>10:30-11:00 207 Zárate Aranda, José Eduardo; Ortiz-Bayliss, José Exploring Classification Cellular Automaton 11:00-11:30 108 Barrera García, José C.; Crawford, Broderick; Soto, Enhancing Resilient Search Algorithms 11:30-12:00 122 Douali, Moulay Rachid; Cherme, Charaf Optimal Fuzzy-Genetic Self-Tuning for Tracking 12:00-12:30 153 Gómez-Fuentes, María C.; Cervantes-Gibed, Jora; Novel Approaches to the Minimum Identifiability</p>	<p><b>10:30-12:30</b> <b>Parallel Session 24-3: Bioinformatics &amp; Medical Applications 2 - Room 8301</b> <b>Session Chair:</b> * If a talk is cancelled, other talks will be moved up.</p> <p>10:30-11:00 156 Reyes-Amezola, Iván; Rojas Ruiz, Leveraging Pre-trained Models for Robust 11:00-11:30 119 Provera, Enrique O.; Muñoz-Vargas, Atrial Fibrillation Classification Using a Deep 11:30-12:00 7 López Miquel, Nancy; Díaz Hernández, Confidence calibration of CNNs in medical 12:00-12:30 32 Salas-Itasca, Alex Saul; Sanchez Impact of altered oxygen level on the</p>
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### Keynote Talk 4: Benjamin Sánchez Lengeling (University of Toronto) Digitizing olfaction with AI: building the RGB of our chemical sense Information Center Auditorium

<p><b>14:30-16:30</b> <b>Parallel Session 24-4: Machine Learning 3 - Information Center Auditorium</b> <b>Session Chair:</b> * If a talk is cancelled, other talks will be moved up.</p> <p>14:30-15:00 118 López Barrios, Jesús Dassoef; Jimenez Cruz, Predicting Water Levels Using Gradient 15:00-15:30 140 Tran, Vanha, Bui, ThiLoan, Do, ThuaiNang, Efficiently Mining High-Average Utility Co- 15:30-16:00 144 Liu, Jorge; Navarra, Maximino; QU! MATH-YE LATTI Personalized Product 16:00-16:30 145 Rivera-Marín; Camós, Bruno; Galicia, Price Estimation For Pre-Owned Vehicles</p>	<p><b>14:30-16:30</b> <b>Parallel Session 24-5: Intelligent Systems 3 - Educational Auditorium</b> <b>Session Chair:</b> * If a talk is cancelled, other talks will be moved up.</p> <p>14:30-15:00 24 García, Eric; Bustio, Lazaro; Cumpido, René Adaptive Intrusion Detection System: Hybrid K- 15:00-15:30 53 Perez Enrique, Lantiza; Jimenez-Dominguez, Miguel Image contrast enhancement: The synergistic 15:30-16:00 57 Gáratea Esamilla, Anna Karen; Martínez, Rafael; Comparative Analysis of Classification Models 16:00-16:30 94 Rodríguez, Orozco José Frequency-distance cochlea equations applied</p>	<p><b>14:30-16:30</b> <b>Parallel Session 24-6: Bioinformatics &amp; Medical Applications 3 - Room 8301</b> <b>Session Chair:</b> * If a talk is cancelled, other talks will be moved up.</p> <p>14:30-15:00 36 Vazquez Palacios, Erendira; Perrinino Segmentation of Pyramidal Rat Neurons in 15:00-15:30 49 Galvis-Chacón, Javier; Ramos-Soto, Optimizing electrocardiogram denoising for 15:30-16:00 123 Barrios, Erick; Tovar Vidal, Mireya; Detection of Depression using depression</p>
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### Former Presidents Panel Session Chair: Information Center Auditorium

**Awards Ceremony / Conference Dinner**  
(Dinner will be served promptly at 8 pm)  
Posada Señorial Hotel

### October 25th, Friday Morning

<p><b>9:00-10:00</b> <b>Parallel Session 25-1: Machine Learning 4 - Information Center Auditorium</b> <b>Session Chair:</b> * If a talk is cancelled, other talks will be moved up.</p> <p>9:00 - 9:30 148 Martínez, Rubén; Trinch, Diego; Huerta, Approximating S2D: A Machine Learning 9:30-10:00 39 Montaña, Luis; Valentin-Cerón, Luis Assessing the Impact of data</p>	<p><b>9:00-10:00</b> <b>Parallel Session 25-2: Intelligent Systems 4 - Educational Auditorium</b> <b>Session Chair:</b> * If a talk is cancelled, other talks will be moved up.</p> <p>9:00 - 9:30 112 González, Claudia Designing optimal CNN architectures using 9:30-10:00 76 Rojas Mironovich, Benito Tomashi; Muñoz Leveraging Data-Intensive Graph Attention</p>	<p><b>9:00-10:00</b> <b>Parallel Session 25-3: Natural Language Processing 2 - Room 8301</b> <b>Session Chair:</b> * If a talk is cancelled, other talks will be moved up.</p> <p>9:00 - 9:30 106 Hernandez, Nayeli; Batyrshin, Igor; Attention + LSTM Aspect-based Sentiment 9:30-10:00 115 Solovikova, Marina; Solovnev, Multilevel Analyses of Russian Texts with</p>	<p><b>9:00-10:00</b> <b>Parallel Session 25-4: Computer Vision &amp; Image Processing 1 - Chavira Room</b> <b>Session Chair:</b> * If a talk is cancelled, other talks will be moved up.</p> <p>9:00 - 9:30 17 Aburto, Yarel; Morales, Eduardo F. Incremental learning for object 9:30-10:00 40 Guzman-Zaragoza, Zoltana J.; Mila-Coron, Aznavn; Easy for us, complex for AI: Assessing the</p>
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### Keynote Talk 5: Ricardo Baeza-Yates (Institute for Experiential AI of Northeastern University) The Limitations of Data, Machine Learning & Us Information Center Auditorium

<p><b>15:30-16:30</b> <b>Parallel Session 25-5: Machine Learning 5 - Information Center Auditorium</b> <b>Session Chair:</b> * If a talk is cancelled, other talks will be moved up.</p> <p>15:30-16:00 143 Landaverde Nava, Adrián; Ramirez Islas, A Data Machine Learning driven approach 16:00-16:30 157 Low, Jesus Antonio; Ghahseroudkhan, Smartphone based Fuel Identification</p>	<p><b>15:30-16:30</b> <b>Parallel Session 25-6: Intelligent Systems 5 - Educational Auditorium</b> <b>Session Chair:</b> * If a talk is cancelled, other talks will be moved up.</p> <p>15:30-16:00 60 Duarte, Jorge; Martínez-Villaseñor, Lourdes Ethical challenges in demand prediction: A case 16:00-16:30 114 Cortés-Antón, Prometeo; Valdez, Fevrier; Melin, Position and Orientation Control on three-step</p>	<p><b>15:30-16:30</b> <b>Parallel Session 25-7: Natural Language Processing 3 - Room 8301</b> <b>Session Chair:</b> * If a talk is cancelled, other talks will be moved up.</p> <p>15:30-16:00 137 Martínez Setis, Bella C.; Pichardo, Automatic Translation of Sentences to 16:00-16:30 3 García García, Cosipio; Derbel, Elise, Speeding up the Multi-Objective NAS</p>	<p><b>15:30-16:30</b> <b>Parallel Session 25-8: Computer Vision &amp; Image Processing 2 - Chavira Room</b> <b>Session Chair:</b> * If a talk is cancelled, other talks will be moved up.</p> <p>15:30-16:00 45 Pérez Ramos, Cristina; Chávez Dagostino, Miguel; Altamirano Comparative analysis of natural landmark 16:00-16:30 152 Aparicio, Carlos Alfredo; Guerrero Ramirez, Cuauhtémoc A. Exploring Anchor-Free Object Detection</p>
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### Closing Ceremony Information Center Auditorium

### October 26th, Saturday Academic activities and cultural program (Tour to "Atlitxco" Magical Town)

<p><b>10:00-18:00</b></p>
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