## Agenda

**WEDNESDAY 19 APRIL 2023**

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
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<tbody>
<tr>
<td>09:00 – 09:20</td>
<td><strong>Welcome Remarks</strong>&lt;br&gt;Dr. Gerardo Hernández-del-Valle, Acting Director, Center for Latin American Monetary Studies (CEMLA)</td>
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<td>09:20 – 10:30</td>
<td><strong>Introduction</strong>&lt;br&gt;- Structure and Organization of the Course&lt;br&gt;- Train, Test and Validation Samples&lt;br&gt;- Cross-Validation</td>
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<td>10:30 – 10:45</td>
<td>Break</td>
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<td>10:45 – 12:15</td>
<td><strong>Introduction II</strong>&lt;br&gt;- Confusion Matrix&lt;br&gt;- Evaluation Measures (Precision, Recall, F1-Score, etc.)&lt;br&gt;- PR Curve</td>
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Moderator of the day: Gerardo Hernández-del-Valle, CEMLA<br>Speakers: Gabriela Alves Werb y Sebastian Seltmann, Deutsche Bundesbank

**THURSDAY 20 APRIL 2023**

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
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<tr>
<td>08:30 – 09:30</td>
<td><strong>Q&amp;A</strong></td>
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<tr>
<td>09:30 – 10:30</td>
<td><strong>Tree-based methods</strong>&lt;br&gt;- Decision Trees (CART)&lt;br&gt;- Conditional Inference Trees</td>
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<td>10:30 – 10:45</td>
<td>Break</td>
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<tr>
<td>10:45 – 12:15</td>
<td><strong>Ensemble methods I</strong>&lt;br&gt;- Bagging&lt;br&gt;- Boosting</td>
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IV Course on Machine Learning and Central Banking
Digital format, April 19 – 21, 2023

Agenda

Moderator of the day: Gerardo Hernández-del-Valle, CEMLA
Ponentes: Gabriela Alves Werb, Sebastian Seltmann, y Stefan Bender, Deutsche Bundesbank

FRIDAY
21 APRIL 2023
México City
Local time
(UTC -6)

08:30 – 09:00 Q&A
09:00 – 10:30 Ensemble methods II
• Random Forest
• Gradient Boosting
10:30 – 10:45 Break
10:45 – 12:15 Machine learning use cases in central banking
• Showcase of Current Applications
• Open Discussion with Participants
12:15 – 12:30 Wrap-up and closing remarks

Optional Readings

For a comprehensive introduction to R, we recommend participants to take the online tutorial "Introduction to R" from Datacamp (https://www.datacamp.com/courses/free-introduction-to-r).


