

Summer short course - MSSG:

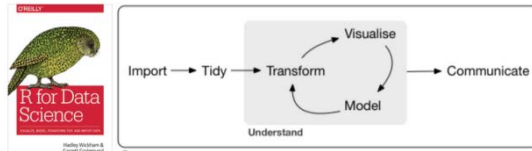
A Journey through Data Science

June 27 - July 15, 2022

Jean Bernard Hayet, Rogelio Ramos, Johan Van Horebeek
TA: Andrea Quintanilla y Rodrigo Castillo



Invited speaker:

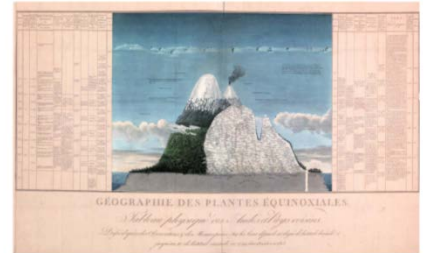
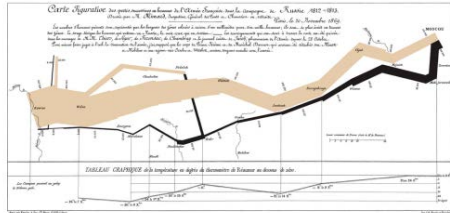


The poster for the MSSG Mathematical Sciences Semesters in Guanajuato Mexico features a blue geometric logo at the top. Below the logo is the text 'Thinking About Data: Representations, Transformations, and Applications' and 'VICTOR M. ZAVALA'. A circular inset on the right shows a portrait of Victor M. Zavala. The main text on the poster reads 'MSSG MATHEMATICAL SCIENCES SEMESTERS IN GUANAJUATO MEXICO' and 'Wednesday, July 6th, 2022 2:30 pm - Auditorio Canavati'. At the bottom, there is a short biography of Victor M. Zavala.

Victor M. Zavala is the Baldwin-DaPra Professor in the Department of Chemical and Biological Engineering at the University of Wisconsin-Madison and a senior computational mathematician in the Mathematics and Computer Science Division at Argonne National Laboratory.

Part 1: Data exploration and data visualization

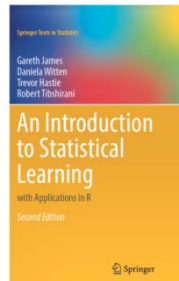
- Review of the R language.
- Data wrangling.
- Visual encoding and effective graph building.
- Grammar of graphics: ggplot library.
- Visualizing 1D data.
- Visualizing multidimensional data.
- Interactivity and storytelling.



Von Humboldt – Gto

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Part 2 & 3: Prediction and regression modeling

- Introduction to statistical modeling and prediction.
- Linear models and regularized models.
- Bias-variance tradeoff.
- K-nn for classification and regression.
- Logistic regression.
- Feed forward neural networks
- Introduction: from logistic regression to the artificial neuron.
- Activation functions and shallow neural networks.
- The math behind back-propagation.
- Deep neural networks.
- Optimization techniques.
- Regularization techniques.
- Practical aspects and examples.

Final Project:

National Survey of Occupation and Employment (ENOE-INEGI)

Invited Speaker:

in collaboration with *Escuelas de Verano 2022*




Thinking About Data: Representations, Transformations, and Applications
VICTOR M. ZAVALA

MSSG
MATHEMATICAL
SCIENCES SEMESTERS
IN GUANAJUATO MEXICO

Wednesday, July 6th, 2022
2:30 pm - Auditorio Canavati

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CULTURAL EXPERIENCE IN GUANAJUATO





Cooking class



