



Track patient recovery in real-time by processing streaming data

BIOMEDICAL DATA DESIGN

TA: Haoyin Xu

Group: Zhenyu Xiao
Haobin Zhou
Yimeng Xu
Emma Cardenas

The slide features a white background with a thick black border. Three large blue circles are positioned at the corners: one in the top-left, one in the top-right, and one in the bottom-left. The text 'Content 01 Missing data processing' is centered on the left side of the slide.

Content 01 Missing data processing

The slide features a white background with a black border. In the corners, there are decorative blue circles: a large one in the top-left, a medium one in the top-right, and a small one in the bottom-left.

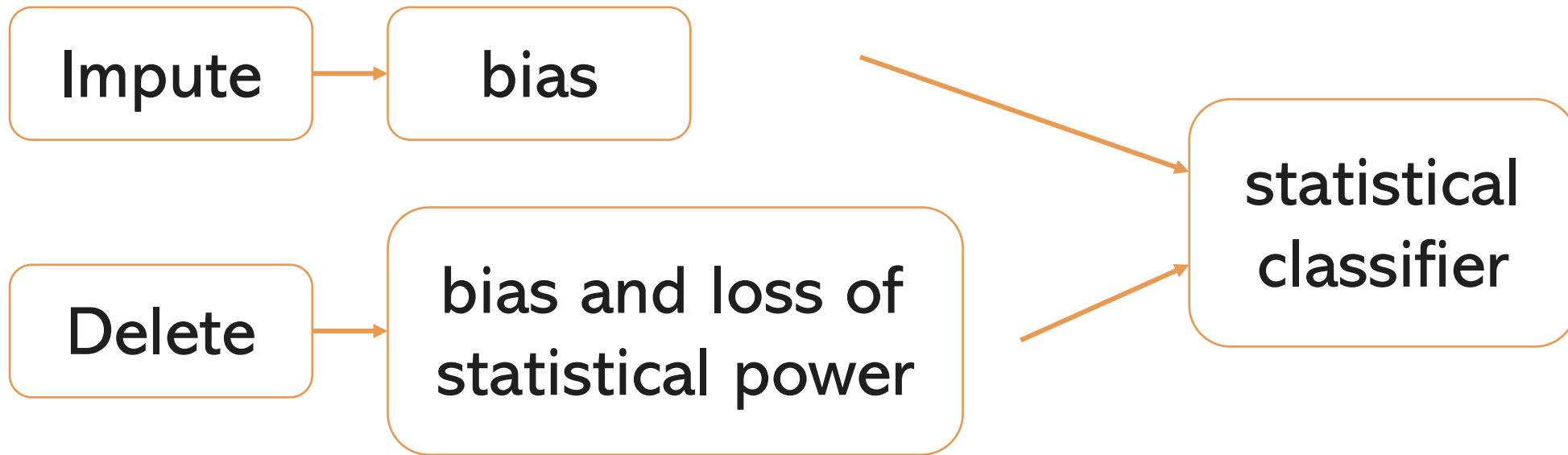
01

Missing data processing

02 Missing data processing

Missing data in medical databases: Impute, delete or classify?

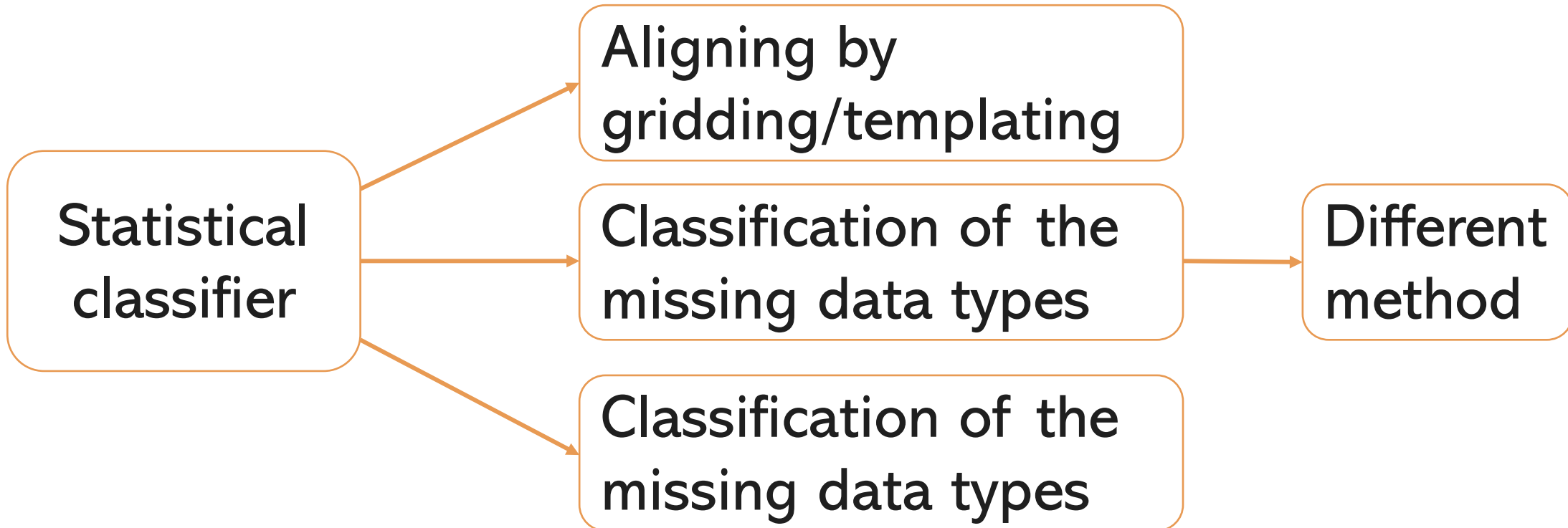
Federico Cismondi^{a b c}  , André S. Fialho^{a b c}, Susana M. Vieira^b, Shane R. Reti^c,
João M.C. Sousa^b, Stan N. Finkelstein^a



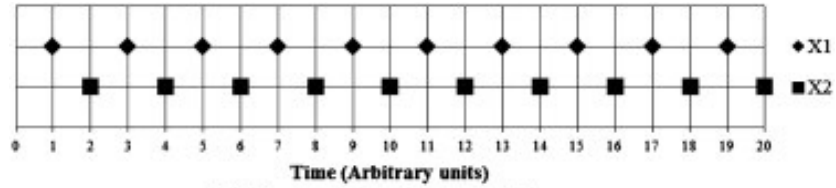
02 Missing data processing

Missing data in medical databases: Impute, delete or classify?

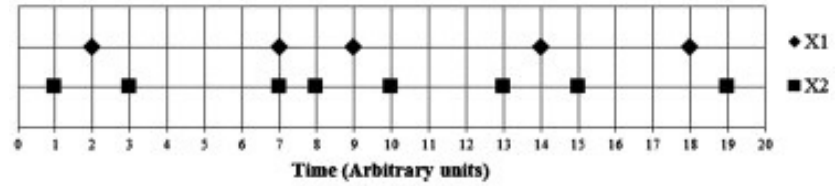
Federico Cismondi^{a b c}  , André S. Fialho^{a b c}, Susana M. Vieira^b, Shane R. Reti^c,
João M.C. Sousa^b, Stan N. Finkelstein^a



Missing data processing: Aligning

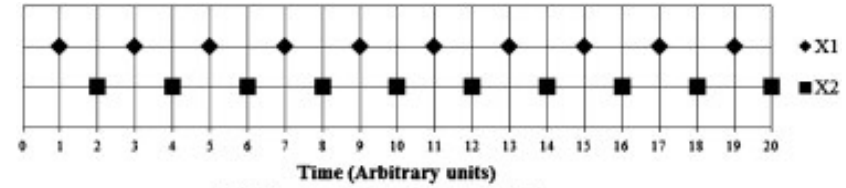


(a) Misaligned evenly sampled data

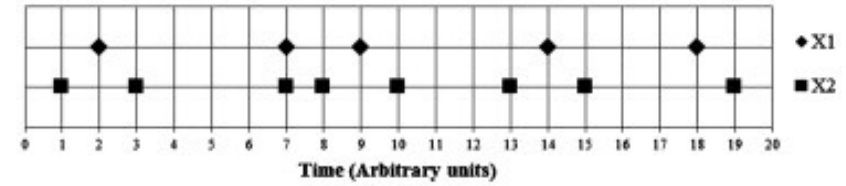


(b) Misaligned unevenly sampled data

Evenly



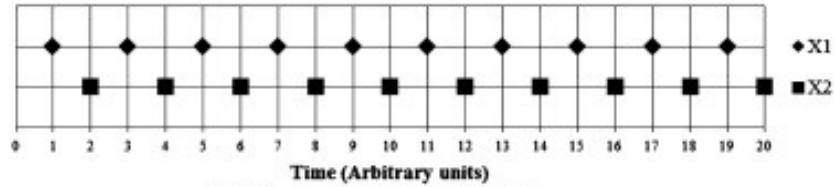
(a) Misaligned evenly sampled data



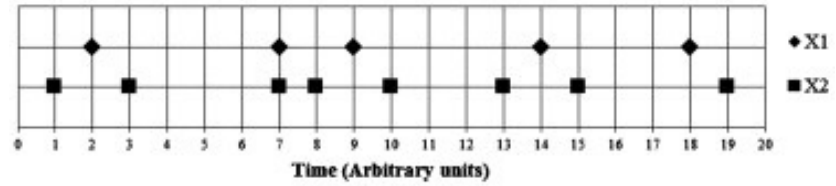
(b) Misaligned unevenly sampled data

Unevenly: the worst

Missing data processing: Aligning

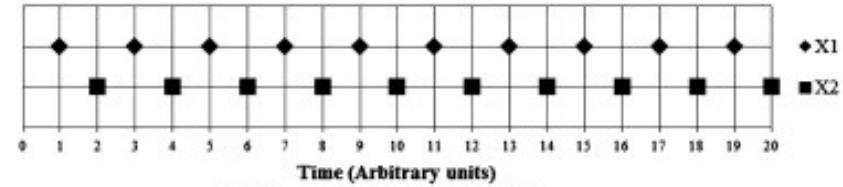


(a) Misaligned evenly sampled data

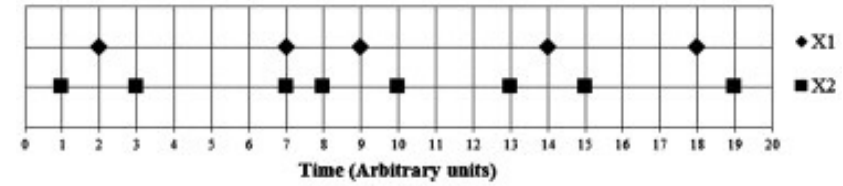


(b) Misaligned unevenly sampled data

Evenly

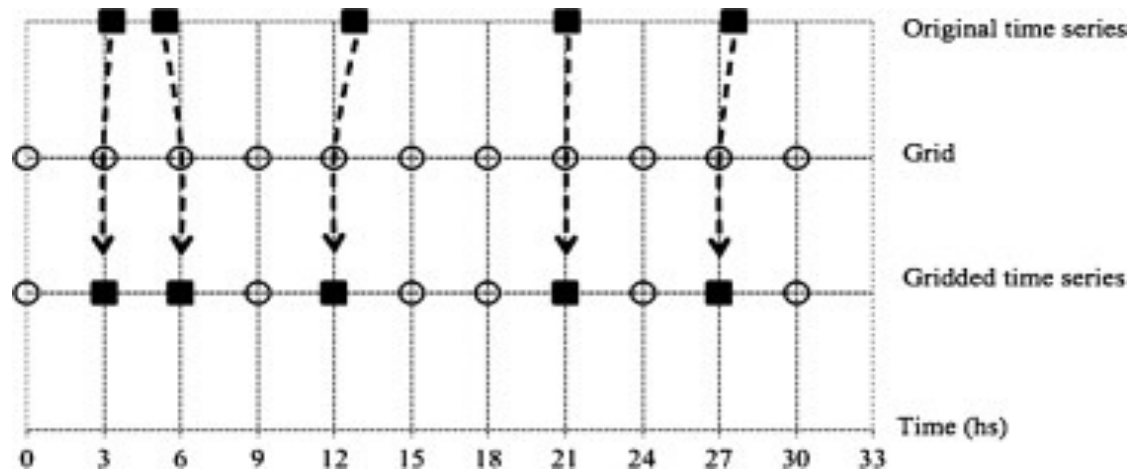


(a) Misaligned evenly sampled data

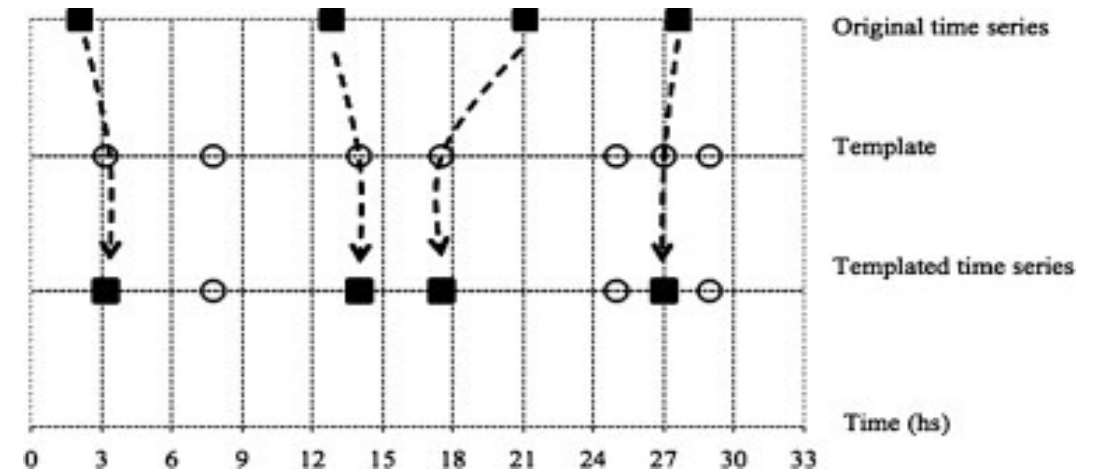


(b) Misaligned unevenly sampled data

Unevenly: the worst



Gridding



Templating

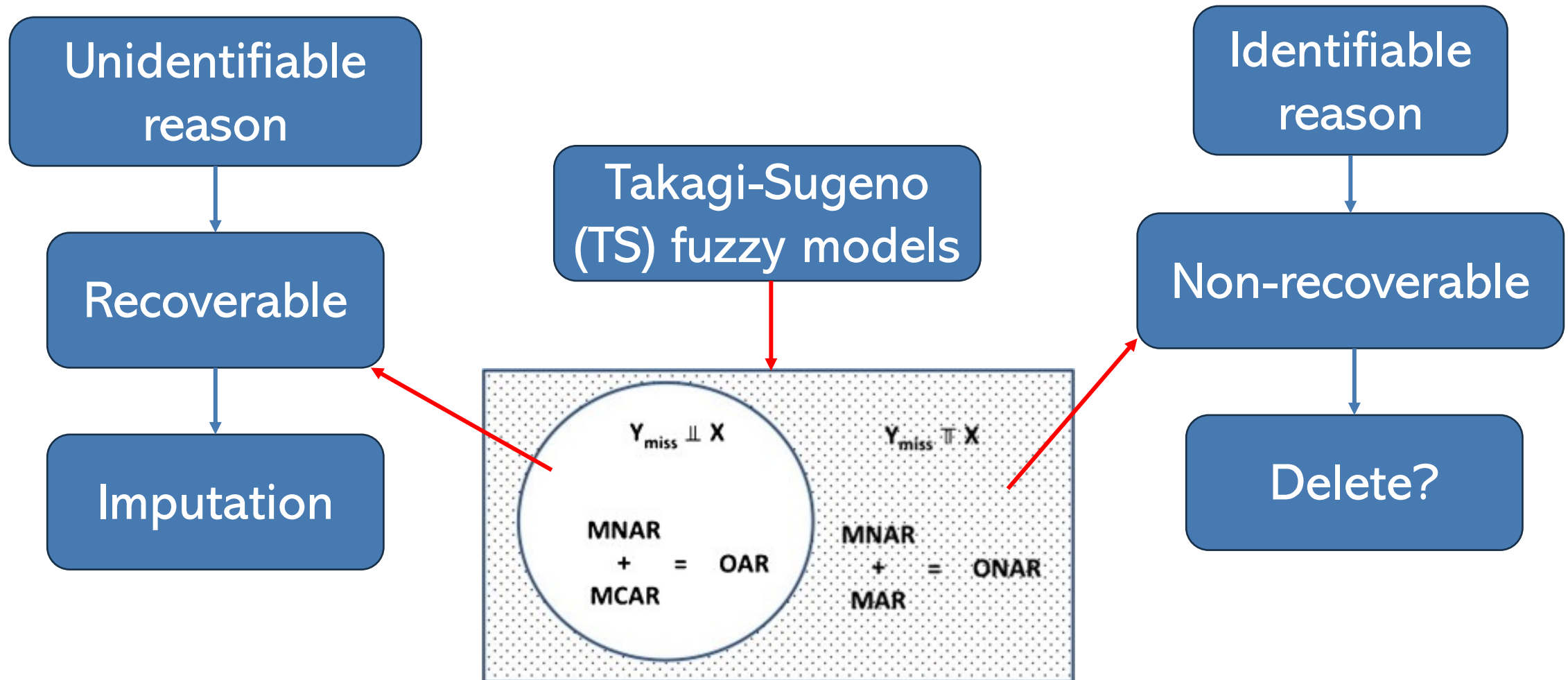
Missing data processing: Missing data processing

Classification: Lack of sampling vs. True missing data







Missing data processing: Missing data processing

Classification: Recoverable & Non-recoverable






02 Missing data processing: Imputation

Adaptive imputation of missing values for incomplete pattern classification

[Zhun-ga Liu](#)^a  , [Quan Pan](#)^a, [Jean Dezert](#)^b , [Arnaud Martin](#)^c 

Hybrid prediction model with missing value imputation for medical data

[Archana Purwar](#)  , [Sandeep Kumar Singh](#) 

K-nearest neighbor (K-NN)
and Self-Organizing Map

K-means clustering and analysis of 11
imputation method

The slide features a white background enclosed by a thick black rectangular border. Three large, solid blue circles are positioned at the corners: one in the top-left, one in the bottom-left, and one on the right side. The text "Thank you" is centered in the middle of the slide.

Thank you