

# Statistical Inference II

PhD in Economics and Statistics, University of Milano-Bicocca

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**Course website:** <https://aldosolari.github.io/SI2>

## Schedule

May 2 **Hypothesis testing**

Darwin data,  $p$ -values, Neyman-Pearson lemma, link with confidence intervals, interval null hypothesis

May 3 **Multiple testing and selective inference**

Replicability crisis, case studies: U.S. economy-politics and jellybeans-acne, error rates: FWER, FDR and FDP

May 7 **Methods for FWER and FDR control**

Golub data, Bonferroni, Holm, Westfall & Young, Benjamini-Hochberg, confidence interval for selected parameters and false coverage rate

May 8 **All-resolutions inference**

fMRI data, closed testing, simultaneous confidence bounds for the FDP

May 10 **The variable selection problem**

Best subset selection algorithm for linear models, post selection inference, model confidence set

Course material, references, etc. will be available on the above course website.