Tél : +352 27 39 351
Fax : +352 27 39 52 68
Email : formation@oxiane.lu

Biostatistics

Biostatistics analyses with R

Détails

- Code : DB-BIO
- Durée : 2 jours (14 heures)

Public

- Data Managers
- Data Scientist
- Professionnels de l'IT
- Professionnels du secteur informatique

Pré-requis

Objectifs

- How to do pre-processing
- What about descriptive statistics
- How to manage principle of Hypothesis Test
- How to compare a sample parameter to a reference parameter
- Compare two samples or more than two ?

Programme

Pre-processing

- Workflow
  - Using RStudio
  - Using RStudio projects
  - Using a simple files organisation method
- Data management:
  - Import csv dataset, check and validate
  - subsetting dataset with dplyr package

Descriptive statistics:

- variables type (numeric, factor) and their univariate and bivariate graphic representation
- position parameters
- dispersion parameters

Estimation

- principle
- sampling
- sampling fluctuation
- confidence interval
- bias

Principle of Hypothesis Test

- Null and alternative hypothesis
- alpha error risk
- pvalue
- power and sample size calculation

Comparing a sample parameter to a reference parameter

- for mean
- for proportion

Comparing two samples

- comparing two means (independent samples)
- comparing two proportions (independent samples)
- comparing two means (paired samples)
- comparing two proportions (paired samples)
- comparing more than two proportions (independent samples)

Comparing more than two means (independent sample)

- ANOVA one way
- Kruskal Wallis test
- multiple comparisons

Comparing more than two means (paired samples)

- mixed models (hierarchical model)
- Friedman test
- multiple comparisons

Assessing link between variables

- two numeric variables
  - correlation
  - simple linear regression
- two quantitative variables
  - independent chi test

Modalités

- Type d'action :Acquisition des connaissances

- Moyens de la formation :Formation présentielle – 1 poste par stagiaire – 1 vidéo projecteur – Support de cours fourni à chaque stagiaire
- Modalités pédagogiques :Exposés – Cas pratiques – Synthèse
- Validation :Exercices de validation – Attestation de stages