Project Themes

- Statistics application in medicine: clinical and epidemiological data analysis: statistical test, sample size, methods for data collection; analysis using regression methods, missing data, correlated data, efficiency of treatment,
- 2. Linear models: regression, generalized regression models, logistic regression, maximum likelihood, EM algorithm, nonparametric maximum likelihood and applications
- 3. Outlier detection, analysis of means, CUSUM and sequential probability ration testing. Applications
- 4. Time series, Statistics for stationary process: Asymptotic results for stationary time series. Estimating trend and seasonality. Nonparametric methods. Multidimensional time series, multidimensional ARMA and ARIMA models, parameter estimation, forecasting, variance decomposition; Statistical applications to economics, modelling of economics and financial data.
- 5. Marketing Analytics, Customer churn prediction, models and analysis, customer behaviors modelling (in bank services, credit cards, communications services, ...)
- 6. Network traffics analysis: modelling, methods, time series representation, congestion control, performance evaluation, network attacks detection
- 7. Statistical modelling in biomedicine, models, methods and prediction; test statistics, goodness of fit test, model evaluation, ROC curve
- 8. Data collection : Incomplete data : missing data, imbanlance data, approaches ; data fusion ; classification.
- 9. Geophysical data analysis: time series, noise, enhancement, models, methods, forecasting
- 10. Highdimentional data analysis: Bioinformatic, design of experiment, representation of data, variable selection, classification and prediction, evaluation.