Optimized method to predict energy in a microgrid

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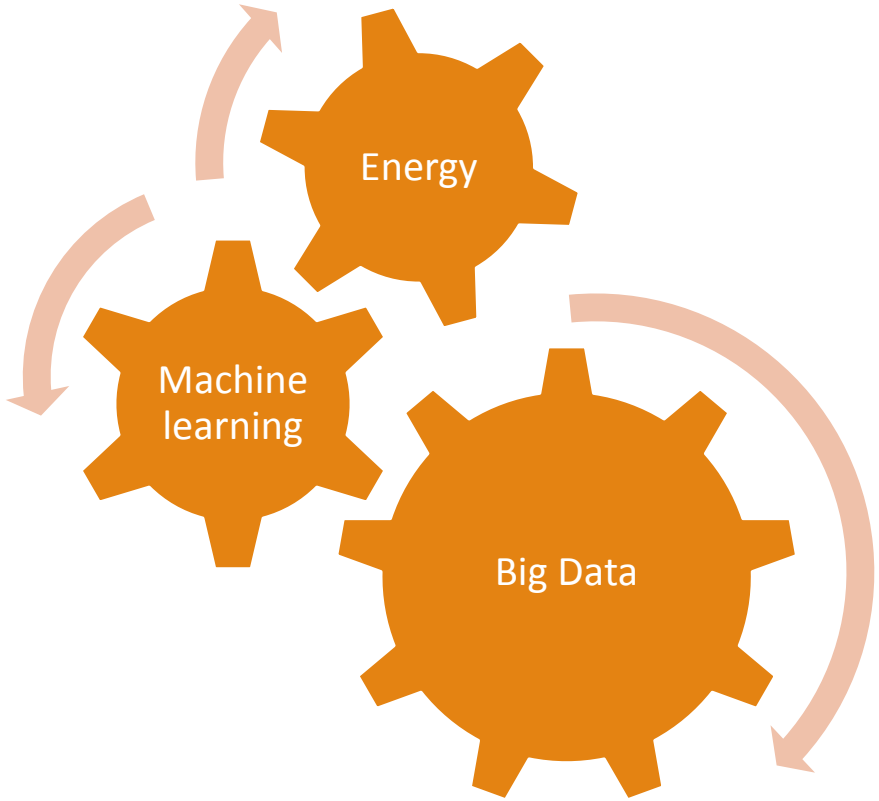
Knowledges



All results => Phd Thesis, Dr Luc Dufour, Contribution à la mise au point d'un pilotage énergétique décentralisé par prédiction, CNRS UMR 5302, 2017

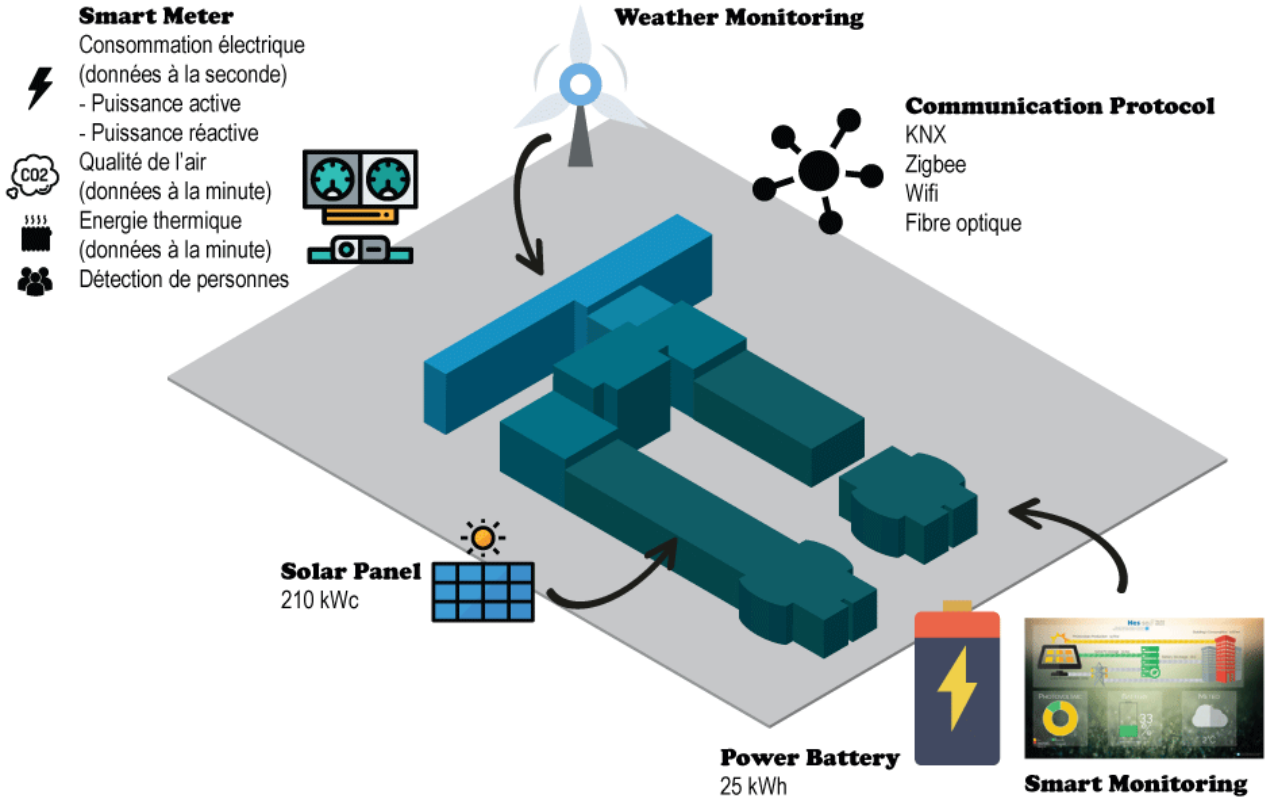
And others publications with

Prof Dr Dominique Genoud,HES-SO Valais-Wallis

Prof Dr Bruno Ladevie, CNRS

Use case

- Technopôle Microgrid in Sierre, HES-SO Valais-Wallis
- Results for the electrical consumption of the restaurant
- Electrical consumption and production collected every second
- 5 years of data



Results

Models	Classification results	Standard deviation
PNN	84.6 +/- 1.2	1.6
MLP	88.8 +/- 1.3	1.5
SVM	91.8 +/- 1.1	1.6
Random Forest	96.1 +/- 0.7	1.5
Gradient Boosted Tree	98.0 +/- 0.6	0.8

Models	MAE	MSE	RMSE	MSD	R^2
MLP	1.9	5.4	2.1	0.2	0.64
PNN	1.9	5.4	2.1	0.2	0.64
Linear Regression	2.3	5.4	2.1	0.2	0.64
ARIMA	2.2	5.4	2.2	0.2	0.64
RF	1.5	4.5	2.1	0.1	0.95
GBT	**1.2**	**4.3**	**1.9**	**0.1**	**0.98**