Internship – *Agriculture Data Science*

Company : AXA Climate

Start : Earliest possible

Length : 4 to 6 months

Tutor : Sylvain Coutu (sylvain.coutu.ch@axa.com), Gilles Cornec (gilles.cornec@axa.com)

Company

AXA, as one of the world leaders in financial protection, supports and advises its customers in three major business lines: Property & Casualty Insurance, Life & Savings, and Asset Management. Since 2014, AXA climate team has developed market-leading products to insure against climate risks. Clients range from individuals and corporations to governments and public institutions; they come from various weather-sensitive sectors across the world including agriculture, renewable energy, construction, transportation, leisure, and textiles.

Data scientists, meteorologists, business developers, and underwriters make up the data and insurance team. Working closely together, they create innovative insurance products that meet clients' needs.

Mission

AXA Climate is looking for an intern who will support the team in creating synthetic yield data base in developing countries based on a combination of satellite imageries and crop statistics.

In addition to this modeling aspect, the intern participate to regular team meetings, getting an overview of what weather and agriculture insurance business looks like.

Main roles and responsibilities

In partnership with the product and underwriting team, the intern will:

1.   Contribute actively to scientific and technical developments

    a.   Brief review of literature on crop modeling at large scale based on satellite data

    b.   Define relevant products (NDVI, CHIRPS, …) to be used in the study

    c.   Establish correlations between satellite data and national crop statistics in target countries (France, USA, Argentina)

    d.   Transpose the calibrated model to one or several developing countries

    e.   Infer yield information at county level in an area where the were originally not exiting

2.   Link the project to business applications:

a.   Make sure the defined model is transposable at global scale

c.   Identify countries where lack of agriculture crop statistics is a frein to the development of insurance programs

d.   Develop an index based on the dataset developed

e.   Propose suggestion for further development (technical improvement, new crops, new countries.

Skills

Background:
- Studies in Data Science, or Environmental/Agriculture Engineering.
- Good handling of large satellite datasets

Language:
- French and English: fluency in one, conversational level in the other

Required skills:
- Good knowledge of remote sensing applications
- R or Python
- Agriculture or Environmental science knowledge is a plus
- Strong autonomy
- Integrity
- Team spirit

	AXA Climate
Department	Underwriting & Science
Location	Paris or Zurich
Internship duration	4 to 6 months
Starting date	As soon as possible
Manager N+1	Antoine Denoix
Supervisor	Sylvain Coutu (sylvain.coutu.ch@axa.com), Gilles Cornec (gilles.cornec@axa.com)