



FOURTH ACTUARIAL PRICING GAME - 2018

Registration and game rules summary

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From February 2018 until May 2018, we are organizing the **Fourth Actuarial Pricing Game**, as part of a research project conducted by **Arthur Charpentier**, Université de Rennes 1 (France) & Quantact (Montréal, Canada), **Ali Farzanehfar**, Imperial College London (UK) and **Yves-Alexandre de Montjoye**, Imperial College London (UK) with the support of the **ACTINFO** chair of the **Institut Louis Bachelier**, and the **Institut des Actuaire** (the French Institute of Actuaries).

The actuarial pricing game involves multiple players with experience or interest in actuarial science. The game provides each of these players with real historical contracts and claims data (**≈10K contracts per player**) to train models and offer premiums. Once all players submit their models, we will simulate a market using previously unseen test data. The winner(s) of the game are chosen based on the performance of the player models in this market simulation. **Note that details on the data, the market simulation, and model requirements will follow after registration.**

Step 1 : From February 14th until **February 28th 2018**, you will have time to register if you want to participate. **In order to register, please visit and fill the online document [available here](#).** Players can be individuals or in a team (identified as one player).

Step 2 : When registration closes, players will receive a **training dataset** (training.csv). The training dataset will be based on two years of data on household policies. There will be information about the insurance policy from underwriters, as well as, claims data. They will also receive a **pricing dataset** (pricing.csv) with only underwriters information and no claims. The goal is to offer a premium for all records in the pricing dataset.

Step 3 : Before **April 9th, 2018**, players will have to provide two files, a pricing function (either a **formula.py** Python function, or a **formula.R** R function) and a dataset with prices (**prices.csv**). There will be limits on the complexity of this function. To ensure this, players will receive instructions on what can be used to construct their formula either in Python or R. Note that by using the function file submitted the prices dataset (**prices.csv**) should be reproduced.

Step 4 : Before **May 14th, 2018**, players are asked again to submit two files, a dataset with prices (**second_prices.csv**) and a pricing model (either a **model.py** Python file, or a **model.R** R file). For this round there are no restrictions on what can be used in the model, as long as, by using the model file submitted the prices dataset (**second_prices.csv**) is reproduced. Players will again receive further instruction on this after registration.

For any questions please contact pricing.game@univ-rennes1.fr.