# Remi BELLINA

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- Engineer (Centrale Lyon, 2011)
- Fully Qualified Actuary (ISFA, 2013)
- Data Scientist (Kaggle Expert, 2016)
- +12 years of P&C consulting at Milliman
- Manager, Generali Climate Lab

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|---|---|
| **Cross-functional** | Management · Technical writing · Public speaking · Teaching & training |
| **Business** | Climate · P&C pricing · Solvency II · Telematics · P&C reserving · Reinsurance · M&A |
| **Technical** | Machine Learning · R · Python · Advanced Excel · Data visualization · Automation · GIS |
| **Languages** | French (Bilingual) · English (B2 - Professional) · Italian (Basic) · Japanese (Basic) |

## Manager, Generali Climate Lab - Generali France

Apr 2025 → present · Paris (France) · Permanent contract (CDI) · 7 months

Managing a multidisciplinary team of 5-10 people (PhD students, work-study trainees, geomaticians, actuaries, data scientists, cat modeler); steering the climate roadmap from R&D to business use; productionizing zoning layers and scores, industrializing internal tools, promoting prevention practices and supporting teams and distribution networks.

**Operations**

- Budget calibration of the climate forecast with drift assumptions
- Weather watch and operational response with Predict Services (targeting, SMS, loss model)
- Geocoding and georisking using GIS skills
- Governance and monthly reporting (Excel/Power BI dashboards) on budget envelope and portfolio risk
- Contribution to the Ensemble Face Aux Risques (EFAR) website and to an internal Climate App (Python/Streamlit)
- Alignment with the Group Climate Hub
- Ongoing training for teams; support to agents and underwriters

**Technical & Modeling**

- Winter storm & hail: zoning layers leveraging ECMWF data, integration of individual vulnerabilities; co-developing a damage model with the Group
- Subsidence: modeling claims, recognitions, frequency and average cost; machine learning for intra-year ultimate prediction using weather data
- Flood: analysis of 'TRI' (return period), distance to watercourses and pluvial runoff (from DEM)
- Climate & health: POC with a startup; launch of a PhD (air quality and cardio-respiratory diseases)
- Coastal retreat & marine submersion: model calibration
- Claim labeling (distinguishing windstorm vs. convective storms) and building an annotated claims corpus
- Automated extraction from expert reports via an LLM-based RAG approach (circumstances, costs, vulnerabilities)
- Business support for developing an external-data enrichment API (computer vision)
- Ongoing PhD: building vulnerability (subsidence) and storm-cluster modeling
- Related topics: modeling of riots and cyber risk

**Prevention**

- Set up a Climate Prevention Plan with partners/startups (flood and subsidence POCs)
- Per-peril prevention sheets
- Work on a taxonomy of preventive measures and eligibility criteria

**Communication**

- Talks at conferences and events (including the Ballon Generali de Paris)
- Explaining climate scores and strategic key messages
- Managing Generali Climate Lab LinkedIn publications and coordinating content
- Academic relations (PARI Chair, etc.)

**CAT Modeling**

- Oversight of CAT modeling: exposure assessment, RMS runs performed by a CAT modeler, multi-model comparison

## Senior Manager & Tech. Lead Analytics - Milliman France

Dec 2012 → Apr 2025 · Paris (France) · Permanent contract (CDI) · 12 years 5 months

Senior Manager · Dec 2020 → Apr 2025 · 4 years 5 months · Tech. Lead Analytics · Dec 2017 → Apr 2025 · 7 years 5 months · Senior Consultant · Dec 2016 → Dec 2020 · 4 years · Consultant · Dec 2012 → Dec 2016 · 4 years

Over 12 years of P&C consulting for insurers, mutuals, bancassurers, insurtechs and corporates. Led multidisciplinary teams (data scientists, data engineers, actuaries); founded and technically led the Analytics department in 2017. Cross-functional contribution on climate topics. Non-life projects: Solvency II (standard formula & internal model), ORSA, IFRS 17, pricing & telematics, reserving, reinsurance, M&A. Communications: conferences, articles, training.

**Climate Risk**

- Modeling subsidence risk for clay shrink-swell (RGA) (claims, geotechnical criterion and SWI) and 2050-2100 projections; subsidence reserving for a bancassurer
- Governance support for setting up a Geo Data Hub for an insurer
- Designed an ORSA prototype for a climate insurtech and supported the authorization filing
- Geospatial analyses with open data; address geocoding via Google & BAN APIs

**Customer Value, Pricing & Telematics**

- Home insurance customer value modeling using machine learning
- Churn modeling in Motor (personal & commercial) using machine learning
- Design/review of rating structures and pure premium for Motor & Home (GLM, XGBoost)
- Instant pricing and simplified questionnaire for online quotes
- Overhaul of the pricing equation for two-wheelers; creation of per-coverage zoning
- Telematics studies in Italy/France/Middle East: GPS trips, speed/accelerations/turns, crash detection; data-provider benchmarking; interactive trip visualization
- Cost assessment for PMDs/bike/e-bike coverages for a new offering using open data

**Reserving, IFRS 17 & M&A**

- Deterministic non-life reserving (Chain-Ladder, loss ratio)
- Reserve reviews (claims reserves to be paid excluding prudence margin) as a second opinion and analysis of technical margins
- Automation of gain/loss analyses and reporting (HTML, PPT); dashboard deployment
- Individual reserving method using machine learning on large claims
- Valuation of P&C companies/portfolios (in-force vs new business)
- IFRS 17 projection prototypes/dashboard (Excel/Power Query/R Shiny): LIC/LRC cash flows, P&L; translation of IFRS 4 reserves to IFRS 17 under the PAA model

**Solvency II - Internal Models**

- Partial internal model for real-estate surety/guarantee (LGD, PD, lapses) in Excel & MIND (C#)
- Efficient calculation of the man-made Fire CAT SCR using k-nearest neighbors (KNN)
- Risk aggregation via Gaussian copula in R for credit insurance; measurement of stochastic dependence; implicit correlations by line of business and AY; sensitivities
- Marginal modeling of premium, reserve and operational risks in credit insurance; additive and multiplicative scalings to correct drift between deterministic and stochastic
- Valuation of annuity best estimate (BEL) within an internal model; equivalent scenario; tax adjustment and recoverability test

**Solvency II - Standard Formula**

- Calculation of SCR, MCR and Best Estimate (claims/premiums, gross/ceded) annually and quarterly; solo & group coverage ratios; data quality & reconciliations
- Excel/Power Query tools for assessments
- Review & development of ORSA forward-looking models
- Guidelines & training (rules, mathamatical concepts)

**Reinsurance**

- Built a full reinsurance accounting tool in R (quota share, excess of loss, stop loss, stability clauses, reinstatements); handling on accident/underwriting year bases
- Reserving and Solvency II calculations for a reinsurance captive

**Health**

- Innovative visualizations for pharmaceutical treatment analysis (Japan)
- Analysis of the DAMIR database
- Simplified COVID modeling using the SIR model

## Corporate Finance Analyst - AXA Liabilities Managers

Apr 2011 → Nov 2012 · Paris (France) · Apprenticeship · 1 year 8 months

Apprenticeship (work-study) · Sep 2011 → Nov 2012 · 1 year 2 months · Internship · Apr 2011 → Sep 2011 · 6 months

Participation in acquisitions of reinsurance portfolios in run-off; development of a projection model incorporating economic capital projection; analysis of interest rate models (Vasicek, CIR); demonstrated the benefits of stochastic versus deterministic pricing.

## Education

**ISFA (Université Lyon 1)** · **Master's in Actuarial Science & Financial Mathematics** · French actuarial school · 2010 → 2012 · Lyon (France)

**École Centrale de Lyon** · **Engineering degree in Applied Mathematics** · Grande École; scientific and technical training · 2008 → 2011 · Lyon (France)

**Lycée du Parc** · **Preparatory Classes MP* (Math-Physics)** · Competitive entrance exams for Grandes Écoles · 2005 → 2008 · Lyon (France)

## Teaching

- **Machine learning** - CART models re-simulated in Excel, ensemble methods and gradient boosting
- **R and Python** - Notebooks, data preparation, modeling, reporting, web applications
- **Pricing** - GLMs and model performance evaluation
- **Data visualization** - best practices; ggplot2, plotly
- **Advanced Excel** - Power Query, Python in Excel, Dynamic Arrays, customization

## Interests

- Home automation with Home Assistant on Raspberry Pi 4 (Zigbee network), including weather-triggered automations
- Japan (culture & travel); learning the language (beginner)

## Certifications

Deep Learning Specialization · Jun 2022 · Coursera
Sequence Models · Jun 2022 · Coursera
Convolutional Neural Networks · May 2022 · Coursera
Structuring Machine Learning Projects · Mar 2022 · Coursera
Improving Deep Neural Networks[...] · Feb 2022 · Coursera
Using Python to Access Web Data · Feb 2022 · Coursera
Cloud Computing Foundations · Jan 2022 · Coursera
Neural Networks and Deep Learning · Jan 2022 · Coursera
Excel Power Tools for Data Analysis · Oct 2021 · Coursera

## Publications

Modèles prédictifs et projections climatiques pour le risque de subsidence (RGA) · Nov 2024 · Milliman

Les apports de l'open data pour les assureurs · Sep 2022 · Milliman

Sécheresse 2022 - Analyse du risque subsidence en France · Jul 2022 · Milliman

Potential data sources for life insurance AI modelling · Apr 2022 · Milliman

Développement et perspectives des insurtechs sur le marché français · Mar 2022 · Milliman

The use of artificial intelligence and data analytics in life insurance · Nov 2021 · Milliman

Automatic extraction of COVID-19 epidemiological parameters using NLP · May 2020 · Milliman

Applications of data science to non-life reserving · Jun 2019 · Milliman

A European insurance leader works with Milliman to process raw telematics data and detect driving behaviour · May 2018 · Milliman

Predictive Analytics - Quelles applications et quelles solutions dans le secteur de l'assurance ? · Mar 2016 · L'Actuariel

Machine Learning : Méthodes d'apprentissage statistique en assurance · Sep 2014 · Milliman

Méthodes d'apprentissage appliquées à la tarification non-vie · Jan 2014 · ISFA

## Conferences

Métier de consultant en actuariat, data science & risques climatiques · Jan 2025 · Aix-Marseille Université · Webinar

De la Donnée à la Décision : Open Data & prédiction du risque sécheresse 2023 · Nov 2023 · Institut des Actuaires · Full-day event

L'assurance face au dérèglement climatique en France · May 2023 · Akur8 · Conference

Changement climatique & modélisation des risques naturels en France · Mar 2023 · Institut des Actuaires · P&C Days

Utilisation de l'Open Data dans le suivi des risques climatiques · Nov 2022 · Institut des Actuaires · Full-day event

Représentation moderne et dynamique de la data au service de la décision · Jun 2022 · Institut des Actuaires · Actuaries Congress

Modernisation des processus de tarification en assurance non-vie · Nov 2021 · Institut des Actuaires · Actuaries Congress

Modélisation du risque cyber & maîtrise des méthodes analytics · Jun 2021 · CAP Actuariat · Webinar

Predictive Modelling for Life & Health Insurance · May 2021 · European Actuarial Academy (EAA) · Webinar

Télématique : du Big Data au Business Model · Nov 2018 · Institut des Actuaires · Full-day event

IoT & Télématiques : exploitation des nouvelles données · Jun 2018 · Institut des Actuaires · Actuaries Congress

Big Data & métiers de l'assurance (IARD) · Nov 2017 · Université de Lille / IANF · Symposium

Predictive Analytics: technologies, usages, applications à l'assurance · Nov 2016 · Institut des Actuaires · Full-day event

Méthodes d'apprentissage statistique · Mar 2014 · Institut des Actuaires · P&C Days

▶ Other conferences (22)