

Layal Christine Lettry

Data Scientist, Econometrician

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Professional Path

Layal Christine Lettry is currently working as a data scientist for the company **cynkra GmbH** based in Zurich.

During her academical path, as she was working as an undergraduate assistant for several statistics courses between 2013 and 2015 at the University of Fribourg, she graduated with a Bachelor of Arts in Management in 2014 and with a Master of Arts in Economics in 2016. Then, she was directly hired as a research assistant and as a PhD student at the **Chair of Industrial Economics** at the University of Fribourg, before she acquired a position at the FSIO in July 2017.

She worked as an econometrician in the Mathematics sector for the Federal Social Insurance Office (FSIO) between July 2017 and September 2022. On behalf of the FSIO, she undertook in 2018 a research project in parallel with her office job as a PhD Student in Economics and Social Sciences under the supervision of Prof. Dr. Laurent Donzé at the University of Fribourg and became a member of the **ASAM Group** (*Applied Statistics and Modelling*).

Working as easily as part of a team or independently, she has taken part to the modelisation and to the estimation of the Old-Age and Survivor's Insurance (OASI) budget as well as to the development and to the maintenance of the R package *delfin* (*DEmography and Long-term FINancing of the Swiss Social Insurances*) according to the *dplyr* grammar. Namely, she has automated in the R programming language the computation and the production of

- the financial perspectives for the Swiss social insurances (in particular for the OASI);
- the financial consequences coming from reforms or initiatives for the OASI;
- the **tables of pensions** for the OASI and for the Disability Insurance (DI);
- the **tables of contributions** for the OASI, for the income compensation allowance in the event of service (IC) and for the DI.

She contributed to the mathematical modelisation of two important reforms of the OASI, namely the *STAF Reform* and *AHV 21 Reform*, which were accepted by the Swiss people respectively in 2019 and in 2022. She also worked as a project leader on the elaboration of the mathematical models of the popular initiatives «Für ein besseres Leben im Alter (Initiative für eine 13. AHV-Rente)» and «Für eine sichere und nachhaltige Altersvorsorge (Renteninitiative)». She took part in the redaction of the messages for each of these two initiatives.

Besides, she has maintained the web pages of the social insurances finances (e.g. [the OASI webpage](#)).

As part of her research project dealing with classification methods (among others), she has worked on the clustering of the Swiss pension register and has developed the R package *rrclust* for which she is completing a working paper.

She started working as a data scientist for [cynkra GmbH](#) in October 2022. Her main tasks are to contribute to the development of (open-source and/or private) R products and services matching clients' requirements and needs as well as to provide R consulting. Working as part of a team, she uses versioning tools such as GitHub and Gitea as well as the publishing platform RStudio Connect and RStudio Workbench.

Personal Data

Date of birth	September 24, 1990
Nationality	Swiss
Maiden Name	Pipoz
Social networks	One can find me on: github.com/Layalchristine24 layalchristinelettry.rbind.io github.com/cynkra Linkedin Mastodon ResearchGate ORCID Academia cynkra Website ASAM UniFr Twitter Google Scholar

Skills and Competences

Languages

French	Mother tongue
Arabic	Second mother tongue
German	oral: good; written: excellent
English	oral: good; written: excellent

Spanish oral: good; written: good

Programming and software knowledges

Programming R, $\text{\LaTeX}$.

Software Specific statistical softwares: R, RStudio, E-Views, SAS, MATLAB, STATA, SPSS.

Version Control Softwares Git, Github, Gitea.

Platforms Internet sites and Learning platforms: Moodle, Adobe Experience Manager (AEM), Datawrapper, Microsoft Teams, Skype, Zoom.

Education

Secondary School

08/2003 – 07/2006 End of secondary school certificate (pre-gymnasium with Latin-Greek), *Belluard Secondary School*, Fribourg, Switzerland, average: 5.62.

High School

09/2006 – 07/2010 **Maturity**, *St. Michael's College*, Fribourg, Switzerland, average: 5.2.
 ○ Latin;
 ○ Bilingual French-German;
 ○ Specific Option: Spanish;
 ○ Complementary Option: Philosophy.

Language Study Programme

09/2010 – 03/2011 **Certificate in Advanced English/Council of Europe Level C1**, *Kaplan International College*, London, England/UK, grade: C.

University

09/2011 – 08/2014 **Bachelor of Arts in Management**, *University of Fribourg*, Fribourg, Switzerland, *magna cum laude*, average: 5.43.
 ○ Econometrics, Statistics, Mathematics for Economists;
 ○ Finance, Accounting, Controlling, Communication and Media Research;
 ○ Microeconomics, Macroeconomics, Managerial Informatics.

09/2014 – 02/2016 **Master of Arts in Economics**, *University of Fribourg*, Fribourg, Switzerland, *summa cum laude*, average: 5.71.
 ○ Quantitative Methods: Econometrics, Statistics;
 ○ Economical Theory: Ethics, Macroeconomics, Microeconomics.

- 02/2016 – 07/2017 **PhD Student in Economics and Social Sciences**, attached to Prof. Dr. Holger Herz, professor at the University of Fribourg, Chair of Industrial Economics, [University of Fribourg, Chair of Industrial Economics](#), Fribourg, Switzerland, field: Microeconomics.
- 08/2016 – 01/2017 **Swiss Program for Beginning Doctoral Students 2016-2017**, [Study Center Gerzensee](#), Gerzensee, Switzerland, Confirmation of course participation.
- 05/2018 – 09/2022 **PhD Student in Economics and Social Sciences**, attached to Prof. Dr. Laurent Donzé, professor at the University of Fribourg, ASAM Group (Applied Statistics and Modelling), Department of Informatics, [University of Fribourg, ASAM Group](#), Fribourg, Switzerland, field: Econometrics.

Awards

- 05/2006 – 05/2006 **Pierre Esseiva Award 2006**, Forum des Langues Anciennes (FLA), Fribourg, Switzerland, *praemium secundum*.
 ◦ Eighth competition of Latin translation of the secondary schools in Fribourg.
- 05/2009 – 05/2009 **Pierre Esseiva Award 2009**, Forum des Langues Anciennes (FLA), Fribourg, Switzerland, *praemium tertium ex aequo*.
 ◦ Eleventh competition of Latin translation of the high schools in Fribourg.
- 10/2016 – 10/2016 **Raiffeisen Award**, [University of Fribourg](#), Fribourg, Switzerland, *summa cum laude*, average: 5.71.
 ◦ Best Master Degree's average of a Fribourg Student in Economics and Social Sciences.

Licenses and certifications

- 11/2018 – 01/2020 **Certificate of Advanced Studies (CAS) in Populations Studies**, [University of Geneva](#), with Prof. Dr. Philippe Wanner, Geneva, Switzerland, field: Demography and Socioeconomics.
- 11/2022 – 11/2022 **Certified ScrumMaster**, [DasScrumTeam](#), Certified ScrumMaster Training with Peter Beck from the 15th to the 16th of November 2022, Certified ScrumMaster (202201126), [DasScrumTeam](#), Zurich, Switzerland, Certificate: active through 17/11/2024.

Varia

- 02/2019 – 07/2019 **Certificate of Attendance**, *Classification Methods*, Spring Semester 2019, with Prof. Dr. Laurent Donzé, professor at the [University of Fribourg, ASAM Group](#), Department of Informatics, Switzerland, field: Econometrics.
- 09/2019 – 09/2019 **Certificate of Attendance**, *Zurich R Courses - Transformation Analysis in R*, from the 26th to the 27th of September 2019, with Dr. Torsten Hothorn, [University of Zurich, Epidemiology, Biostatistics and Prevention Institute / Zurich R courses program](#), Zurich, Switzerland.

Jobs

Universities and Institutes

09/2013 – 12/2015

Undergraduate Assistant, attached to Dr. Christoph Leuenberger, Lecturer, and to Dr. Daniel Kauth, Lecturer, Department of Informatics, **University of Fribourg**, Fribourg, Switzerland.

Field: Statistics.

02/2016 – 06/2017

Research Assistant, PhD Student, attached to Prof. Dr. Holger Herz, professor at the University of Fribourg, Chair of Industrial Economics, **University of Fribourg, Chair of Industrial Economics**, Fribourg, Switzerland.

Field: Microeconomics.

Public Sector

07/2017 – 09/2022

Econometrician, *Federal Social Insurance Office (FSIO)*, **Federal Social Insurance Office**, Berne, Switzerland.

Mathematics, Analyses and Statistics (MAS) Domain, Mathematics.

Private Sector

10/2022 – today

Data Scientist, *cynkra GmbH*, **cynkra**, Zurich, Switzerland.

R Consulting, Open Source, RStudio Enterprise Solutions.

Professional affiliations

07/2018 – today

Swiss Statistical Society (SSS).

Member.

08/2018 – today

adminR.

Member.

03/2022 – today

Swiss Society of Economics and Statistics (SSES).

Member.

Events

08/2018 – 08/2018

Swiss Statistics Meeting 2018, *Swiss Statistics Meeting*, from the 27th to the 29th of August 2018, Zurich.

Presentation (Modélisation de la projection des rentes AVS).

September 19, 2019

AdminR, *Meeting up AdminR*, University of Fribourg.

Presentation of the R package delfin attached to the FSIO (Demography and Long-term Financing of the Swiss Social Insurances).

Teaching

Bachelor

09/2013 – 01/2014	Statistique pour économistes. BA Course, Exercises, 1 st Year, Fall semester.
02/2014 – 06/2014	Calcul des Probabilités. BA Course, Exercises, 1 st Year, Spring semester.
09/2014 – 01/2015	Statistik I. BA Course, Exercises (with SPSS), 1 st Year, Fall semester.
02/2015 – 06/2015	Introduction à la statistique II. BA Course, Exercises, 2 nd Year, Spring semester.
09/2015 – 01/2016	Statistik I. BA Course, Exercises (with SPSS), 1 st Year, Fall semester.
02/2016 – 06/2016	Mikroökonomie II. BA Course, Exercises, 1 st Year, Spring semester.
02/2017 – 06/2017	Mikroökonomie II. BA Course, Exercises, 1 st Year, Spring semester.

Publications, contributions and conferences

Master Thesis

Pipoz, Loyal Christine (Dec. 2015). "Du retour des mères sur le marché du travail suisse. L'influence d'une interruption de carrière sur le salaire des femmes". French. MA thesis. Fribourg, Switzerland: University of Fribourg. URL: https://www.unifr.ch/bp2/de/assets/public/files/BP2_FSES_TM_2020_09.pdf (visited on 10/14/2021).

Proceedings and articles

Donzé, Laurent (Aug. 2018). "Expertise «Validierung des Modellansatzes zur Berechnung und Projektion der Einnahmen und Ausgaben der AHV»". French. In: URL: https://www.bsv.admin.ch/dam/bsv/de/dokumente/ahv/finanzperspektiven/validierung-modellansatz-ahv.pdf.download.pdf/2018_07_09_definitif_ld_rapport_ofas.pdf.

Huber, Martin et al. (2020). "Direct and indirect effects of continuous treatments based on generalized propensity score weighting". In: *Journal of Applied Econometrics* 35.7, pp. 814–840. DOI: <https://doi.org/10.1002/jae.2765>. URL: <https://onlinelibrary.wiley.com/doi/abs/10.1002/jae.2765>.

Pipoz, Loyal Christine (Dec. 2018a). "Modèle de projection des dépenses de l'AVS". French. Trans. by Service linguistique de l'OFAS. In: *Sécurité Sociale CHSS* 4/2018, pp. 67–68. URL: <https://soziale-sicherheit-chss.ch/fr/modele-de-projection-des-depenses-de-lavs/> (visited on 12/08/2021).

Conferences

Lettry, Loyal Christine (Sept. 2019). "Presentation of the R package delfin attached to the FSIO (Demography and Long-term Financing of the Swiss Social Insurances)". In: AdminR. URL: www.meetup.com/fr-FR/adminR/events/263835294/.

Pipoz, Loyal Christine (Aug. 2018b). "Modélisation de la projection des rentes AVS". In: URL: <https://www.statistiktage.ch/fr/archives-fr/2018>.

Research reports (author/contributions)

Hsu, Yu-Chin et al. (2018). *Direct and indirect effects of continuous treatments based on generalized propensity score weighting*. English. Working Paper 495. Fribourg, Switzerland: Université de Fribourg, p. 27. URL: https://doc.rero.ch/record/309416/files/WP_SES_495.pdf.

Lettry, Loyal Christine and Laurent Donzé (Feb. 2023). *Clustering the Swiss Pension Register*. English. Research rep. 529. Fribourg, Switzerland: University of Fribourg, p. 132. URL: <https://folia.unifr.ch/unifr/documents/324081>.

Müller, André et al. (June 2022). *Renteninitiative: Auswirkungen auf Arbeitsmarkt, Gesamtwirtschaft, ALV und Sozialhilfe*. Deutsch. Research rep. 9/22. Beiträge zur Sozialen Sicherheit: Ecoplan AG; Bundesamt für Sozialversicherungen. URL: <https://www.bsv.admin.ch/bsv/de/home/publikationen-und-service/forschung/forschungspublikationen.exturl.html?lang=de&lnr=09/22#pubdb>.

Contributions to the development of legal documents

OFAS/BSV/FSIO (Aug. 2019a). *Botschaft zur Stabilisierung der AHV (AHV 21) / Message relatif à la stabilisation de l'AVS (AVS 21)*. URL: <https://www.fedlex.admin.ch/eli/fga/2019/2267/fr>.

— (Feb. 2019b). *Hintergrunddokument Steuer-AHV-Vorlage, Beitrag zur Deckung des Finanzierungsbedarfs der AHV / Fiche d'information Projet Fiscalité et AVS, contribution à la couverture du besoin financier de l'AVS*. URL: <https://www.efd.admin.ch/dam/efd/en/das-efd/gesetzgebung/abstimmungen/ahv-hintergrund-berechnungen.pdf.download.pdf/20190218%20DE%20STAF%20Hintergrund%20Berechnungen%2020190215.pdf>.

— (May 2022a). *Botschaft zur Volksinitiative, Für ein besseres Leben im Alter (Initiative für eine 13. AHV-Rente) / Message concernant l'initiative populaire, Mieux vivre à la retraite (initiative pour une 13e rente AVS)*. URL: <https://www.fedlex.admin.ch/eli/fga/2022/1485/fr>.

— (June 2022b). *Botschaft zur Volksinitiative, Für eine sichere und nachhaltige Altersvorsorge (Renteninitiative) / Message concernant l'initiative populaire, Pour une prévoyance vieillesse sûre et pérenne (initiative sur les rentes)*. URL: <https://www.fedlex.admin.ch/eli/fga/2022/1711/de>.