

## Contact

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(LinkedIn)  
[sesjo.github.io/portfolio/](https://sesjo.github.io/portfolio/) (Portfolio)

## Top Skills

Data Analytics  
Data Visualization  
Science

## Languages

Français (Native or Bilingual)  
Anglais (Full Professional)  
Espagnol (Elementary)

## Publications

Characterization of postdive recovery using sound recordings and its relationship to dive duration, exertion and foraging effort of southern elephant seals (*Mirounga leonina*)

Elephant seals as ecosystem sentinels for the northeast Pacific Ocean twilight zone.

Digital evolution: Novo Nordisk's shift to ontology-based data management.

Variation in body condition during the post-moult foraging trip of southern elephant seals and its consequences on diving behaviour.

Adjustment of diving behaviour with prey encounters and body condition in a deep diving predator: the Southern Elephant Seal

# Joffrey Joumaa

PhD | Product Owner | Data Management | Data Analytics | Digital Transformation

Copenhagen, Capital Region of Denmark, Denmark

## Summary

Data-driven and innovative professional with a proven track record in both industry and academia, specializing in machine learning, data visualization, and advanced data management strategies. At Novo Nordisk, I combined technical expertise and leadership to drive innovation through automation, knowledge graph development, and collaboration across teams.

Key achievements include:

- Developing a graphRAG-based chat application as part of a proof of concept.
- Acting as Product Owner to ensure team continuity and successful project delivery.
- Contributing to data management strategy by establishing data contracts.
- Leading efforts in ontology and knowledge graph development for enhanced semantic search.

I am committed to pursuing leadership roles where I combine strategic vision with technical expertise to drive impactful outcomes.

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## Experience

Novo Nordisk

1 year 10 months

Ontology and Semantic Engineering - Product Owner

January 2025 - Present (5 months)

Copenhagen, Capital Region of Denmark, Denmark

- Coordinating the efforts of a diverse, cross-functional team of 6 professionals across 4 countries.
- Leading the development of a knowledge graph that transforms internal unstructured data into actionable insights.

- Driving the creation and implementation of semantically enriched data contracts to enhance data interoperability and governance.
- Collaborating to deliver controlled terminology aligned with ontologies, improving data consistency across the organization.
- Managing the product backlog and engaging with over 20 stakeholders to ensure successful project deliveries as part of a broader digital transformation strategy.

#### Semantic Engineer - Ontology Steward

August 2023 - December 2024 (1 year 5 months)

Copenhagen, Région de la Capitale, Danemark

Leveraged technical expertise and leadership skills to drive innovation and enhance data management through automation, knowledge graph development, and effective team collaboration.

- Designed and implemented pipelines in Azure DevOps to trigger EC2-based scripts for ontology testing.
- Successfully developed a chat application using a graphRAG-based approach as part of a proof of concept (POC).
- Stepped into the Product Owner (PO) role to support the team during the PO's absence, ensuring project continuity and delivery.
- Contributed to establishing data contracts, shaping the organization's data management strategy.
- Actively contributing to the development of a comprehensive knowledge graph for structuring and parsing complex datasets.
- Leveraged ontology embeddings to enable semantic search and initiated the development of automated ontology reconciliation processes.

#### University of California, Santa Cruz

Data Scientist

October 2021 - July 2023 (1 year 10 months)

Santa Cruz, Californie, États-Unis

Turning raw information into valuable marine ecology research by leveraging data collected using new cutting edge tags (i.e. mainly motion sensors) deployed in northern elephant seals:

- Classification (DBSCAN, k-means)
- Dash application (dash, python)
- R package development
- Containerization (Docker)
- Supervision of undergraduate students

## Thegreendata

### Data Scientist

April 2020 - August 2021 (1 year 5 months)

Ville de Paris, Île-de-France, France

Developed econometric models and decision-support tools to help stakeholder in the agriculture sector becoming data-driven

- Classification (k-means, Random Forest, hierarchical clustering, CART)
- Dimensionality Reduction Algorithms (PCA)
- Prototyping (Shiny, Dash)
- Time series forecasting (ARIMA family)
- Regularized Regression (LASSO, Ridge)
- Simulation (Monte Carlo)

## Saegus

1 year 5 months

### Data Scientist - Groupama

January 2020 - March 2020 (3 months)

Paris et périphérie

- Leveraged data from call routing to improve and align customer experience among all regional entities (Spark, Dataiku)
- Transposed several conversion rate models initially developed with SAS, towards new solutions with Python and Dataiku.

## Tableau Practice Leader - Bolloré Transport & Logistics

July 2019 - December 2019 (6 months)

Région de Paris, France

- Provided support and expertise on various projects initiated with Tableau (Desktop, Prep and Server)
- Helped with the creation of a Data Visualization pole within Bolloré
- Community manager to help with the adoption of Tableau

## Data Analyst - L'Oréal

November 2018 - June 2019 (8 months)

Région de Paris, France

- Build reports and dashboards to monitor KPIs (Key Performance Indicators), understand drivers of KPI changes
- Data visualization creation, maintenance and support in a worldwide context (> 3500 users, 64 countries)
- Implementation of an influencers monitoring page

## IT&M STATS

## Biostatistician - Da Volterra

July 2018 - October 2018 (4 months)

Région de Paris, France

- Implementation of statistical analysis for 16S metagenomic data (parametric and non-parametric tests, mixed models with random effects or repeated measures, adjustment for multiple testing)
- Management of subcontracting analyses

## Malakoff Médéric

Data Analyst

December 2017 - June 2018 (7 months)

Région de Paris, France

Withing the Customer Service Department:

- Implementation of a customer call reminder segmentation based on text fields filled by phone operators
- Text Mining (Topic Modeling, Regular Expression, Cloudword)
- Data Visualization (ggplot2, Shiny, D3.js, Plotly)

## CNRS - Centre national de la recherche scientifique

3 years 2 months

PhD

October 2013 - November 2016 (3 years 2 months)

Beauvoir sur Niort

By using machine learning to analyze bio-logging data collected from tagged southern elephant seals (*Mirounga leonina*), the objectives of my PhD were to investigate the diving and predation behaviours of the largest phocid in the world, without ever seeing it.

- Regression (Logistic, Linear, Additive, ...)
- Classification (Random Forest, K-means, KNN, SVM, ...)
- Statistics (Multivariate Analysis, PCA, ...)
- Signal Processing (Spectral Estimation, Signal Filtering)
- Optimal Foraging Theory, Optimal Diving Theory
- Movement Ecology (3D Trajectory Reconstruction using Dead Reckoning Methods, First Passage Analysis)

This PhD was carried out with financial support from the DGA (Direction Générale de l'Armement) and in collaboration with the SMRU (Sea Mammal Research Unit, University of St Andrews, Patrick Miller).

## Fieldworker

September 2014 - November 2014 (3 months)

Kerguelen Islands

- Tagging and tag recovery on Southern elephant seals
- Elephant seals pups monitoring
- Field missions logistics (team organization, time management, ...)
- Capture, anesthesia and blood sample on elephant seals

Carrefour

Warehouseman

August 2013 - September 2013 (2 months)

Angoulins

CNRS - Centre national de la recherche scientifique

Intern

January 2013 - June 2013 (6 months)

Villiers en Bois

"Adjustment of fishing effort by southern elephant seal in response to prey patch quality"

Optimal diving models investigate how predators should adjust their diving behaviour to optimize their foraging efficiency. In this study we used Time-Depth-Recorders and 3D accelerometers to investigate diving behaviour of six post-breeding females southern elephant seals (SES) (*Mirounga leonina*) in response to prey patch quality. On 22700 dives recorded, dive angles, swimming effort, animal's body density and when prey are captured in dives were assessed from acceleration data. Increase in bottom time duration was related to diving depth according to a quadratic relationship in absence of prey catch attempts. Bottom time duration was shorter in dives with captures than without, due to increased bottom swimming effort when fishing. In presence of captures, bottom time duration increases with number of prey captured at the bottom but decreases with these during ascent and descent phase. Total amount of surface time to restore oxygen reserves was related to an increase of total dive duration and total swimming effort provided during dives, but not to total number of prey capture attempts. These results suggest that SESs adjust their dive duration at fine scale in response to patch quality. (supervisor: Christophe GUINET)

CNRS - Centre national de la recherche scientifique

Intern

June 2012 - July 2012 (2 months)

La Rochelle

Analysis of diving behavior of gray seals (*Halichoerus grypus*) from telemetry data obtained by Iroise Marine Natural Park. (Littoral Environnement et Sociétés (CNRS - UMR 7622), supervisor: Cécile VINCENT)

## CNRS - Centre national de la recherche scientifique

Intern

January 2011 - February 2011 (2 months)

La Rochelle , France

Seasonal variation of energy density of preys of marine mammals in the Bay of Biscay (Littoral Environnement et Sociétés (CNRS - UMR 7622), supervisor: Jérôme SPITZ)

## Massey University

Intern

May 2010 - July 2010 (3 months)

Nouvelle-Zélande

Density and distribution of common dolphins (*Delphinus* sp.) in the Hauraki Gulf, New Zealand (Coastal Marine Research Group, supervisor: Sarah DWYER)

## Darty

Seasonal Employee

August 2007 - August 2007 (1 month)

Bondy (93, France)

In charge of the inventory of computer stock.

## Roby

Warehouseman

July 2007 - July 2007 (1 month)

Noisy le Sec

## Roby

Warehouseman

August 2005 - August 2005 (1 month)

Noisy le Sec

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## Education

Université de La Rochelle

PhD, Quantitative Ecology · (2013 - 2016)

Université Paul Sabatier (Toulouse III)

Master 2 (M2), Biodiversité, Écologie, Évolution · (2012 - 2013)

Université de Bretagne Occidentale

Diplôme Universitaire : Découvertes du monde de l'entreprise, Biologie marine et océanographie biologique · (2011 - 2012)

Institut Univesitaire Européen de la Mer

Master 1 Sciences de la Mer et du Littoral, Sciences Biologiques Marines · (2010 - 2011)

Université de La Rochelle

Licence Biologie - Biochimie, Biologie et Écologie Marines · (2009 - 2010)