



Ludovic BOCKEN, PhDs (c) - INTP-T, Data professional specialized in Customized Quality Control & Optimization of Data driven & AI/ML/NLP based Innovation
Soft skills : Empath, Thoughtful, Passionate, Curious, Insightful, Creative, Visionary
In Montreal, open to remote and weekly travels - Interviews av.: after 5 pm from Wed. to Sun.
Permanent Resident waiting for the citizenship ceremony - lbocken@gmail.com - +1-514-649-0755
<https://www.linkedin.com/in/ludovicbocken/> - 30,000 connections
Salary expectations aligned with <https://ca.talent.com/salary>
[Click here for an example of knowledge graph analysis](#)

SUMMARY

R&D Engineer with more than 20 years of experience in Communication, NLP, AI and ML for academics, research and the technology & Internet industry. Highly skilled in human understanding, analytics and creative resolution of complex problems. Very adaptable - lived in three continents : Africa, Europe and North America. Bilingual in English and French.

TECHNICAL SKILLS

- **Analysis:** pandas, NumPy, Statsmodels.
- **Big Data:** Apache : Spark, Hadoop, Flink, Kafka.
- **Cloud:** AWS, GCP, Microsoft Azure ; IBM Cloud Paks, Teradata.
- **Containers:** Docker, Kubernetes, Apache Mesos.
- **Deployment:** Flask, Django, Streamlit, TensorFlow Serving, Kubeflow.
- **Development:** Visual Studio Code, Posit ; GitHub, GitLab, Git ; Jupyter.
- **Formats:** HTML, SGML, XML, json, AIML, YAML.
- **Graphs:** Neo4J, Gephi, networkx
- **ML:** Keras, TensorFlow, PyTorch, scikit-learn, PyCaret, PyG, MXNet, Caffe.
- **Monitoring:** Apache Airflow, TensorBoard, Neptune AI, WandB.
- **NLP:** spacy, nltk, Wikidata, NooJ.
- **Processing:** Apache: Beam, Storm, Nifi.
- **Programs:** Python, R, Java, JavaScript, C++, Scala, Perl, Prolog, Haskell
- **Queries:** SQL, SPARQL, Cypher.
- **Semantic Web:** RDF, OWL, owlready2, HermiT/Pellet, Protégé.
- **Storage:** SQL/NoSQL, dbeaver, Amazon S3, Google Cloud Storage.
- **Visualization:** PowerBI, Tableau, Shiny, Plotly, Matplotlib, Seaborn, Bokeh, ggplot2.
- **Warehousing:** Apache: Hive, Impala.

EXPERIENCE

- **Aidomena, Experts systems for Data-driven Innovation lead by CDOs & Data professionals** Montreal, CA
Trustworthy NLU Microservices with Automated Reasoning, OpenAI ChatGPT & Open Data jan. 2023 - present
- **SIA Innovations, IBM Platinum Business Partner - IBM Build Labs - Hydro-Québec** Montreal, CA
AI Client Engineering Lead, Senior Data/NLP/ML Engineer/Scientist/Architect/Researcher jan. 2022 - jan. 2023
- **Rocket Science : L'Oréal Canada - Amazon, Ericsson, Kueski** Montreal, CA
Senior Machine Learning Engineer (MLOps, Machine Learning, NLP, Computer Vision) oct. 2021 - jan. 2022
- **Bell Canada (Business Markets), Scale AI Canada's AI Supercluster** Montreal, CA
Machine Learning Engineer, Data Scientist, Data Analyst for ML & NLP applications feb. 2021 - sept. 2021
- **Polyckqalai - Quality Control of Innovation, R&D with AI in North America and Europe** Montreal, CA
Researcher, Founder, Chief Executive Officer, Chief Data Officer, Consultant jan. 2019 - Present
- **Fonds de recherche du Québec Société et Culture (FRQSC), UQAM, TELUQ** Montreal, CA
Doctoral Fellowships - Combinatorial textual metrics and supervised text classification in Wikipedia 2015-2018
- **Université de Lille I - Sciences & Technologies, CUEEP** Lille, FR
Educational Data Mining & Moodle E-learning Webmaster for Teaching French As Foreign Language jul. 2010
- **Pôle Académique Université Libre de Bruxelles - HELB (Business Department)** Brussels, BE
Research Thesis Advisor, Project Manager, Assistant Professor in Communication & Computer Science 2008 - 2011
- **R&D for patents** Brussels, BE
NLP & NLU (Assisted reading) ; Knowledge Management ; Biomechanics - Stretching Machines 2001 - Present

EDUCATION

- **Carnegie Mellon University** Pittsburgh, US
Chief Data Officer Certificate planned for 2027
- **Stanford University** Stanford, US
Artificial Intelligence Professional Program planned for 2026
- **Massachusetts Institute of Technology (MIT) - Professional Education** Cambridge, US
Professional Certificate in Data Engineering planned for 2025
- **Cornell University** Ithaca, US
Machine Learning Certificate Program planned for 2024

- **Harvard University** Cambridge, US
Professional Certificate in Data Science planned for 2023
- **IBM Watson & MLOps, Amazon Web Services, Microsoft Azure, Google Cloud Platform** Montreal, CA
Professional Certifications for Solutions in Artificial Intelligence, Machine Learning, Data Science and NLP work in progress
- **Université du Québec à Montréal (UQAM) - Université du Québec (TELUQ)** Montreal, CA
PhD candidate in Cognitive computing - Artificial Intelligence ; Success scholarship ; $\approx 90\%$ 2012 – 2019
- **Université de Franche-Comté (UFC)** Besançon, FR
cotutelle - PhD candidate in Natural Language Processing - use of NooJ 2013 – 2019
- **Université Libre de Bruxelles (ULB)** Brussels, BE
Master of Arts in languages and literatures ; High Distinction 2008 – 2010
- **Université Libre de Bruxelles (ULB)** Brussels, Belgium
Training to teach Communication in High Education 2008
- **Université Catholique de Louvain (UCL) - Université Libre de Bruxelles (ULB)** LLN-Brussels, BE
Master of Arts in Linguistics; Distinction 2002 – 2006
- **Université Catholique de Louvain (UCL)** Brussels, BE
Bachelor of Arts in Philosophy; Distinction in the first year 1999 – 2001

SOME RECOMMENDATIONS FROM LINKEDIN

- **André Gagnon, Strategist & Designer AI / Digital Transformation @ IBM:** Ludovic is a brilliant data scientist who dwells equally well in the technical, the scientific approach as well as in the human understanding of the development of a complex implementation of an AI product. It was a pleasure to have met and collaborated with him on the conception and deployment of IBM Watson Discovery for field technician at Hydro-Quebec. His abilities to identify and deploy pertinent NLU and NLP methodology to harness tacit and implicit knowledge and make it available through the search engine and assure its relevancy is truly the value added. I had the chance to learn directly from an expert and participate in the crafting of a cutting-edge solution with his hands on and thoughtful approach. His wise and humorous approach makes it a charm to collaborate and exchange on a still occult discipline that is AI. I highly recommend him to help you define, architecture and deliver highly complex AI solutions and make sense of the data available and bring value to all your stakeholders.
- **Félix Frenette - Product Owner @ Hydro-Quebec:** Ludovic's expertise has been essential in laying the foundations of our AI and ML solutions to develop best practices. Ludovic: intellect, skill & expertise in DS. First, Ludovic is brilliant and knowledgeable: he constantly keeps his expertise up-to-date. He is passionate about his subject and is naturally interested in current emerging concepts in DS. This attitude is game-changing. He imbibes a lot of novelties and scientific research in his field and reads a lot on the subject, which is constantly reflected in his daily work. His leadership in making the right decisions around data governance and for his clients to recommend appropriate solutions to projects is of crucial value. Ludovic was also able to convey his theoretical expertise pragmatically and concretely, and help us put these solutions in place. It was essential for us. He managed to manipulate big data and help build systems with the governance in place. He was able to derive great value from it, and his expertise in programming on more complex problems was recognized. He has a pedagogical approach to explaining complex technical concepts so that we can understand them well and visualize the vision to be put in place. Thank you for your precious help, I can only recommend you because it shows that you are well ... in your element!
- **Alexsandro Fonseca, PhD - Data Scientist @ Desjardins:** Ludovic has a brilliant, curious and analytical mind. He is very able to understand complex problems and extract the deep meaning of concepts, structures and data. Combined with his incredible skills in NLP and ML, he is capable of bringing invaluable insights for any project he participates.
- **Jean-Guy Meunier, PhD, Professor of Text analytics and Cognitive computing @ UQAM:** The expertise of Ludovic is at the cutting-edge of AI applied to information and knowledge database construction, management and recommendation. However, his personal and original signature is his high competence in the two main domains underlying this field : linguistics and computer science. He masters in a scholarly and practical manner the complexity of analyzing texts, of extracting their semantic and communicative content. On the other side, he is highly skilled for translating these tasks into many and most intelligent data mining and learning algorithms.
- **Francis Sesmonde, iWintoo - by CXu:** Ludovic has the capacity and vision to absorb and foresee trends in DS, ML and NLP to bring R&D insights to facilitate software solutions development. [...] You will save time with his recommendations, his previous works will give a quick framework to your objectives and accelerate the pace of your DS works. I highly recommend him for linguistics, semantics, NLP, ML, and DS R&D.
- **Cédric Fairon, PhD, Full Professor at UCL, Faculty Dean, Director of CENTAL:** I first met Ludovic when he was a student in Linguistics and he started to be interested in NLP. He took several of my courses and I remember him as a very dynamic and creative student, impassioned by language studies and quite energized by new technologies. He has a rich and original academic background that reveals his broad interest for human communication.
- **Zhibin Lu, ML Engineer @SIA Innovations:** Ludovic is a thoughtful and experienced senior data scientist with extraordinary data insight, who knows how to manipulate data and always gets inspiration from it, even from very little data. Ludovic has a solid foundation in NLP and ML, he especially very good at leveraging Wikidata/Wikipedia data. He is very good at semantic analysis, and is good at building knowledge graphs and conceptualize linguistic models. Ludovic enjoys helping people around him and loves to pass on his expertise. During my time working with him, I learned how a senior data scientist uses data, and I worked with him to learn about knowledge graphs, including web3, RDF, OWL, and other interesting techniques. He always has a lot of ideas and is willing to learn new things and share his knowledge. All in all, I have benefited a lot from working with him and I would be very happy to recommend him to you.

- What experience do you have working with data?:** I have an extended experience of data science for more than 20 years in symbolic and statistical AI applications. My first data project applied NLP resources and rules in rendering complex philosophical texts to better understand them. Then, I taught professional communication, knowledge modeling and project management in high education in a business department to hundred of students in public relations and computer science. In this context, I developed e-learning platforms and applied educational data mining methods to gain insights and improve education strategies. As a PhD candidate in NLP and Cognitive computing, I developed models based on combinatorial textual metrics to predict the quality and assistance of Wikipedia articles to read scientific texts. For Bell Canada, I applied sentiment analyses and optimized an existing application to predict delivery time of network installation and NLP applications to manage corporate emails. For L'Oréal Canada, inside a web application, I applied BERT deep learning models to map product catalogs according to taxonomies and derive keywords based rankings and recommendations to optimize e-commerce marketing strategies. For Hydro-Québec, I optimized NLU and named entity recognition capabilities of IBM Watson systems for Conversational AI and information retrieval to recommend technical documentation to solve technical problems and tasks. With IBM Build Labs, I initiated a project, designed its key architecture and lead a team skilled in data engineering and machine learning to recommend automatically answers to requests for proposals. I am currently developing microservices of automated reasoning integrating OpenAI ChatGPT, OpenAlex and Open data to deliver trustworthy NLU in Conversational AI.
- How have you worked with teams across organizations using data to solve complex business problems?:** I have worked in agile mode with all the project management tooling (Jira, Confluence, ClickUp, ...), with many business analysts/teams and many data professionals, with several large companies such as Hydro-Québec, L'Oréal Canada, IBM Canada and IBM Labs, Bell Canada. Our main collaborations were oriented to support or develop new initiatives from several activities: requirements gathering, processes definition, data models developing, data analysis, data transformation, data validation, machine learning optimization. I have also worked closely with stakeholders to ensure that the state of the data, the data models and the data formats meet their needs and their systems in a timely implementation to support and optimize machine learning solutions/systems (for instance IBM Watson Discovery, IBM Watson Assistant) and applications (classification, ranking and recommendations of Amazon Data). With them, I worked with many kinds of data sources such as SQL databases (Postgres for instance), NoSQL databases (MongoDB for instance), structured and unstructured files of many formats (for instance JSON, CSV, TSV, xlsx, docx, pdf, XML) and APIs (SAP, Electropedia, Wikidata, Wikipedia).
- What technologies have you used in your data journey?:** I used a lot of different kind of tools in my data-driven projects. Obviously, I used several database management tools such as pgAdmin or dbeaver and spreadsheet editors like Excel! I have experience with many programming, markup and querying languages. Twenty years ago, I started to code NLU applications in Visual Basic, after I learned Perl for computational linguistics, then Prolog, Haskell, Java, R and Python. I practiced LaTeX for patents, scientific and analytics reports, HTML, CSS, XML and JSON with web applications and APIs, and semantic web formats for knowledge based applications. For now, my daily practice is in Python and specifically R when I really want very oriented statistical/analytical programs. I used a lot of different kind of libraries according to the problems I had to solve. I am continuing to investigate what is done in other programming languages and why. For instance, I am using Scala, JavaScript and C++ to develop full-stack machine learning applications with big data and knowledge graphs. I am also using and researching deep querying capabilities of SQL, SPARQL and graph query languages to build explainable NLP and AI applications. I am using daily combination of Postgres databases and visualizations tools such as Gephi and PowerBI to build dashboards for technology intelligence and competitive intelligence. Graph and network analysis methods are part of my actual focus. About the cloud computing platforms, I used mainly Google Cloud (for machine/deep learning applications to the benefit of L'Oréal Canada), AWS and IBM Cloud Pak for Data and IBM Cloud Pak for Business Automation (for the benefit of Hydro-Québec).
- What challenges have you met as a data professional?:** Data accuracy and quality have always been very important to support and optimize data-driven processes to the clients I worked for. In many cases, because of the size of these huge companies, the origin of the data, and the number of employees, data standardization has been a very critical step to solve problems and optimize business processes. Normalizing, filtering and extracting data products, names and values of entities and relationships improved considerably the structure of the applications and the definition of the top priorities to optimize machine learning solutions and their performance results. I specialized myself in NLU but even in non specifically NLP applications so they can be integrated together in large data and AI ecosystems and platforms. So, both the meaning and the quality of the data are in my radar since the first steps of any project I provide value. With more deep semantics and better linked models, this kind of approach supported the very best global insights to lead better digital transformation in these companies. Following this track, several data governance principles and statistical methodologies have been applied to rank priorities in the treatment and ingestion of the data into systems and platforms.
- Why should I hire you as a data professional?:** I believe that I am a very resourceful candidate to hire mainly because of my broad large experience, my passion for always learning and adapt, and my abilities to crack complex problems. I have a strong background in data science, analytics but also in cognitive science and so forth in artificial intelligence. I am continuing to study every day to be more and more skilled and competitive in data science, machine learning, data engineering, artificial intelligence. I am also doing personal research in logics and mathematics to better understand the structure of concepts and their relationships in the big data of our knowledge society. I continuously share my knowledge about quality to facilitate positive digital transformations. I applied a lot of different methods during my career to solve complex problems and make my clients happy. My interest to deep dive into complex problems makes me a jack-of-all-trades in the industry of Internet and information technology. I am very flexible after my living in 3 cities (Kinshasa, Brussels, Montreal) located in 3 countries (RDC, Belgium, Canada) in 3 different continents (Africa, Europe, North America). I am a very strong communicator thanks to my experience in teaching professional communication and project management for students in public relations and computer science. I am working with a variety of data technologies and methodologies. I experienced different kind of organizations and collaborations in agile mode with business teams and project management. Overall, I am very confident that I will provide your organization with great added business value!