

# Hanna Abi Akl

Researcher in Artificial Intelligence



## Personal Information

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<b>LinkedIn</b>	<a href="https://linkedin.com/in/hannaabiakl">linkedin.com/in/hannaabiakl</a>
<b>Github</b>	<a href="https://github.com/HannaAbiAkl">HannaAbiAkl</a>
<b>ORCID ID</b>	0000-0001-9829-7401

## Summary

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I am a researcher in logic, language and computation. My research interests include neuro-symbolic artificial intelligence, knowledge representation, knowledge graphs, ontologies, natural language processing and the semantic web. I am currently a PhD student at INRIA working on neuro-symbolic and knowledge-based approaches to develop reasoning abilities in Large Language Models. I also teach at Data ScienceTech Institute.

## Education

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**Jan 2025 - Present**

**PhD in Computer Science**

**[INRIA - Université Côte d'Azur, Nice, France](#)**

Topic: Neuro-symbolic and knowledge-based approaches for reasoning in Large Language Models

Supervision: Fabien Gandon, Pierre Monnin, Catherine Faron

Keywords: Reasoning, Knowledge Graphs, Ontologies, NLP, Semantic Web

Summer Schools: ESSAI 2025, Reasoning Web 2025

<b>Dec 2024 - Jun 2026</b>	<b>Executive MBA</b> <b>Quantic School of Business and Technology</b> Awarded the France Leadership scholarship
<b>Dec 2023 - Jul 2024</b>	<b>Master, Computer Science</b> <b>Université Côte d'Azur, Nice, France</b> Awarded full validation for the Validation d'Acquis par Expérience (VAE)
<b>Oct 2018 - Sep 2019</b>	<b>M.Sc., Data Science and Artificial Intelligence</b> <b>Data ScienceTech Institute, Paris, France</b> Graduation Summa Cum Laude Second prize at HackBordeaux 2019 Capgemini challenge (FuelMi)
<b>Sep 2011 - May 2015</b>	<b>B.E., Computer and Communications Engineering</b> <b>American University of Beirut, Beirut, Lebanon</b> Dean's Honor List for Spring Semester 2015 Second prize in National Instruments elevator design challenge Recipient of the Philippe Jabre Association scholarship for excellence
<b>Sep 1998 - Jun 2011</b>	<b>High School Diploma (General Sciences)</b> <b>Collège Notre Dame de Jamhour, Beirut, Lebanon</b> Graduation with high distinction in French and Lebanese Baccalaureates Recipient of the Carlos Ghosn scholarship for excellence

## Employment

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<b>Jan 2025 - Present</b>	<b>PhD in Computer Science</b> <b>INRIA - Université Côte d'Azur, Nice, France</b> Teaching activities at Data ScienceTech Institute at Bachelors and Masters levels in Data Analysis, Data Science and Data Engineering Open-source contributions of code, models and datasets in artificial intelligence
<b>Aug 2024 - Present</b>	<b>Adjunct Instructor</b> <b>Sciences Po, Paris, France</b> Teaching activities in Master of Technology and Global Affairs programme: Fundamentals of Cloud Computing
<b>Feb 2023 - Present</b>	<b>External Scientific Collaborator</b> <b>INRIA, Nice, Provence-Alpes-Côte d'Azur, France</b> Member of the WIMMICS team PhD thesis supervision on triplet relation extraction using NLP and Semantic Web methodologies

Testing and validation of the KGStat tutorial project based on Machine Learning techniques using Semantic Web data

**Feb 2023 - Present**

**Chief Academic Officer and Research Professor**

**Data ScienceTech Institute, Paris, France**

Teaching activities: Clean IT, Software Engineering, Machine Learning Labs, Artificial Neural Networks, Deep Learning, Amazon Web Services, Data Wrangling with SQL

Preparation of Faculty Seminars and scientific programme reviews

Technical liaison between students and Direction of Studies team

Improvement of programme structure and evaluation (Bachelors and Masters level)

Responsible for faculty recruitment interviews

**Apr 2019 - Feb 2013**

**Data Scientist & Machine Learning Engineer**

**Yseop, Paris, France**

Identification and prototyping of artificial intelligence use cases using machine and deep learning techniques

Design and integration of artificial intelligence tools in existing product from text corpora, APIs, business ontologies and knowledge graphs

Patent writing for intelligent tools responsible for financial reporting automation

Co-chair in the COLING 2020, COLING 2021 and FNP 2022 workshops

Second prize in the FinSim-3 2021 shared task

Winner of the Yseop Q1 2021 Innovation and Q3 2022 Trust Company Core Values Awards

**Sep 2021 - Feb 2023**

**Course Instructor**

**Data ScienceTech Institute, Paris, France**

Teaching activities: Clean IT, Software Engineering, Machine Learning Labs

**Jan 2019 - Apr 2019**

**Private Tutor**

**Paris, France**

Preparing students for the "AWS Certified Solutions Architect – Associate" certification exam

**Jun 2015 - Aug 2018**

**Data Integration Engineer**

**Data Consult, Beirut, Lebanon**

Configuration, maintenance and customization of cloud applications

High-level analysis and smart data reporting through API and chatbot software integration

Implementation of first Smart City solution in Lebanon

Presentation of data augmentation platform at the Mobile World Congress (MWC)

**Jul 2014 - Aug 2014**

**Site Implementation and Maintenance (SI&M) Engineering Intern**

## Touch, Beirut, Lebanon

Theoretical research on the development and advancement of 4G technology

Jun 2012 - Dec 2013

Research Assistant

## American University of Beirut, Beirut, Lebanon

Benchmarking and optimization of Alaoui filter and integrator model parameters in Matlab

Sep 2011 - Sep 2015

Private Tutor

## Beirut, Lebanon

Teaching middle school and high school subjects

## Scientific Publications

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- Célian Ringwald, Fabien Gandon, Catherine Faron, Franck Michel, **Hanna Abi Akl**. Kastor: Fine-tuned Small Language Models for Shape-based Active Relation Extraction. ESWC 2025.
- **Hanna Abi Akl**, Dominique Mariko, Yann-Alan Pilatte, Stéphane Durfort, Nesrine Yahiaoui, Anubhav Gupta. Knowledge Graphs can play together: Addressing knowledge graph alignment from ontologies in the biomedical domain. KDIR. 2024.
- **Hanna Abi Akl**. Project SHADOW: Symbolic Higher-order Associative Deductive reasoning On Wikidata using LM probing. NATL. 2024.
- **Hanna Abi Akl**. DSTI at LLMs4OL 2024 Task A: Intrinsic versus extrinsic knowledge for type classification. LLMs4OL at ISWC. 2024.
- Célian Ringwald, Fabien Gandon, Catherine Faron, Franck Michel, **Hanna Abi Akl**. 12 shades of RDF: Impact of Syntaxes on Data Extraction with Language Models. ESWC 2024.
- **Hanna Abi Akl**. NeSy is alive and well: A LLM-driven symbolic approach for better code comment data generation and classification. GeNeSy at ESWC. 2024.
- Célian Ringwald, Fabien Gandon, Catherine Faron, Franck Michel, **Hanna Abi Akl**. Well-Written Knowledge Graphs. AAAI. 2024.
- **Hanna Abi Akl**. PSYCHIC: A Neuro-Symbolic Framework for Knowledge Graph Question-Answering Grounding. The Scholarly-QALD challenge at the International Semantic Web Conference. 2023.
- **Hanna Abi Akl**. A ML-LLM pairing for better code comment classification. Information Retrieval in Software Engineering track at Forum for Information Retrieval Evaluation. 2023.
- Célian Ringwald, Fabien Gandon, Catherine Faron, Franck Michel, **Hanna Abi Akl**. Learning RDF pattern extractors from natural language and knowledge graphs-application to Wikipedia and the LOD. ISWS 2023 & GEMSS. 2023.
- **Hanna Abi Akl**. The Path to Autonomous Learners. Computing Conference. 2023.
- Rami Bou Khalil, Ramez Dagher, Myriam Zarzour, Ghassan Sleilat, **Hanna Abi Akl**, Maya Kallab, Sami Richa. The impact of lockdown and other stressors during the COVID-19 pandemic on depression and anxiety in a Lebanese opportunistic sample: an online cross-sectional survey. Current Psychology, 1-11. 2022.
- **Hanna Abi Akl**, Dominique Mariko, Hugues De Mazancourt. Yseop at FinSim-3 Shared Task 2021: Specializing Financial Domain Learning with Phrase Representations. Proceedings of the Third Workshop on Financial Technology and Natural Language Processing. 2021.
- Anubhav Gupta, **Hanna Abi Akl**, Hugues De Mazancourt. Not All Titles are Created Equal: Financial Document Structure Extraction Shared Task. Proceedings of the 3rd Financial Narrative Processing Workshop. 2021.
- Dominique Mariko, **Hanna Abi Akl**, Estelle Labidurie, Stéphane Durfort, Hugues de Mazancourt, Mahmoud El-Haj. The Financial Document Causality Detection Shared Task (FinCausal 2021). Proceedings of the 3rd Financial Narrative Processing Workshop. 2021.
- Dominique Mariko, Estelle Labidurie, Yagmur Ozturk, **Hanna Abi Akl**, Hugues de Mazancourt. Data Processing and Annotation Schemes for FinCausal Shared Task. arXiv preprint arXiv:2012.02498. 2020.
- **Hanna Abi Akl**, Dominique Mariko, Estelle Labidurie. Yseop at SemEval-2020 Task 5: Cascaded BERT Language Model for Counterfactual Statement Analysis. Proceedings of the Fourteenth Workshop on Semantic Evaluation. 2020.
- **Hanna Abi Akl**, Anubhav Gupta, Dominique Mariko. Fintoc-2019 shared task: Finding title in text blocks. Proceedings of the Second Financial Narrative Processing Workshop (FNP 2019). 2019.

## Scientific Patents

- **Hanna Abi Akl**, Hugues de Mazancourt, Dominique Mariko. Ontology mapping and adaptation systems and methods. U.S. Patent No. 12,106,049. 2024.
- **Hanna Abi Akl**, Hugues de Mazancourt, Dominique Mariko, Valentin Pierart. Systems and methods for measuring automatability of report generation using a natural language generation system. U.S. Patent No. 11,734,517. 2023.
- Dominique Mariko, **Hanna Abi Akl**, Hugues de Mazancourt. Techniques for generating natural language text customized to linguistic preferences of a user. U.S. Patent No. 11,501,088. 2022.

## Skills

**Software and Web development:** C, C++, Java, JavaScript, Python, HTML5, CSS3

**DBMS:** Microsoft SQL Server, MySQL, Postgres, Neo4j

## Semantic Web: RDF, RDFS, OWL, SPARQL

## Machine & Deep Learning: Classification, Regression, Clustering, Reinforcement Learning

## Version control: Git, SVN

## Containerization: Docker

**Software:** Matlab, Latex

**Operating systems:** Windows, Linux (bash scripting)

**Project management:** Agile methods (Scrum), Test-Driven Development

## Cloud Architecture: AWS

## Languages

<b>English</b>	Fluent
<b>French</b>	Fluent
<b>Arabic</b>	Fluent

## Community Service

<b>Jun 2025 - Nov 2025</b>	<b>Reviewer</b> <b>Industry Track @ EMNLP 2025, Suzhou, China</b> Reviewing paper submissions
<b>Jun 2025 - Jun 2025</b>	<b>Reviewer</b> <b>Engineering Applications of Artificial Intelligence Journal</b>

	Reviewing paper submissions
<b>Apr 2025 - Jul 2025</b>	<b>Program Committee Reviewer</b> <b>Workshop on Assessing World Models: Methods and Metrics for Evaluating Understanding @ ICML 2025, Vancouver, Canada</b> Reviewing paper submissions
<b>Feb 2025 - Sep 2025</b>	<b>Program Committee Reviewer</b> <b>NeSy 2025, California, USA</b> Reviewing paper submissions
<b>Jan 2025 - Apr 2025</b>	<b>Reviewer</b> <b>Workshop on Representational Alignment @ ICLR 2025, Singapore</b> Reviewing paper submissions
<b>Nov 2024 - Nov 2024</b>	<b>Reviewer</b> <b>Neurosymbolic Artificial Intelligence Journal</b> Reviewing paper submissions to the Special Issue after NeSy 2024
<b>Nov 2024 - Jul 2025</b>	<b>Program Committee Reviewer</b> <b>XAI 2025</b> Reviewing paper submissions
<b>Aug 2024 - Dec 2024</b>	<b>Program Committee Reviewer</b> <b>Workshop on Behavioral Machine Learning @ NeurIPS 2024, Vancouver, Canada</b> Reviewing paper submissions
<b>Aug 2024 - Nov 2024</b>	<b>Program Committee Reviewer</b> <b>Harmonising Generative AI and Semantic Web Technologies @ ISWC 2024, Maryland, USA</b> Reviewing paper submissions
<b>Aug 2024 - Nov 2024</b>	<b>Ethics Reviewer</b> <b>Industry Track @ EMNLP 2024, Florida, USA</b> Reviewing paper submissions
<b>Jun 2024 - Jul 2024</b>	<b>Program Committee Reviewer</b> <b>Large Language Models and Cognition @ ICML 2024, Vienna, Austria</b> Reviewing paper submissions
<b>Jan 2024 - Present</b>	<b>Member</b> <b>Association for Computational Linguistics</b> Member of the ACL organization

<b>Oct 2023 - Present</b>	<b>Member</b> <a href="#">The Alan Turing Institute</a> Member of the Knowledge Graphs and Neuro-symbolic AI interest groups
<b>Sep 2023 - Present</b>	<b>Member</b> <a href="#">W3C</a> Member of the Cognitive AI, AI Knowledge Representation and Knowledge Graph Construction community groups
<b>Apr 2024 - Aug 2024</b>	<b>Program Committee Reviewer</b> <a href="#">NLDM 2024, Chennai, India</a> Reviewing paper submissions
<b>Apr 2024 - Jul 2024</b>	<b>Program Committee Reviewer</b> <a href="#">CSTY 2024, Toronto, Canada</a> Reviewing paper submissions
<b>Mar 2024 - Jul 2024</b>	<b>Program Committee Reviewer</b> <a href="#">XAI 2024, Valletta, Malta</a> Reviewing paper submissions
<b>Mar 2024 - May 2024</b>	<b>Program Committee Reviewer</b> <a href="#">AdNLP 2024, Vancouver, Canada</a> Reviewing paper submissions
<b>Feb 2024 - Sep 2024</b>	<b>Program Committee Reviewer</b> <a href="#">NeSy 2024, Barcelona, Spain</a> Reviewing paper submissions
<b>Dec 2023 - May 2024</b>	<b>Program Committee Reviewer</b> <a href="#">NLP &amp; AI (NLPAI) 2024, Virtual Conference</a> Reviewing paper submissions
<b>Nov 2023 - Feb 2024</b>	<b>Program Committee Reviewer</b> <a href="#">NuCLeaR @ AAI 2024 (Neuro-Symbolic Learning and Reasoning in the era of Large Language Models), Vancouver, Canada</a> Reviewing paper submissions
<b>Sep 2023 - Jan 2024</b>	<b>Contributing Author</b> <a href="#">The Paris Institute for Critical Thinking</a> Author of the article "What's in a Name?"

<b>Jul 2023 - Jul 2023</b>	<b>First Aid Training</b> <b>Protection Civile Paris Seine, Paris, France</b> Passed the "PSC1 - Prévention et Secours Civiques de niveau 1" civilian first respondent and rescue certification
<b>Jun 2023 - Jun 2023</b>	<b>Conference Presenter</b> <b>The Science and Information (SAI) Organization, London, United Kingdom</b> Presentation of the paper "The Path to Autonomous Learners" at the Computing Conference
<b>Jul 2023 - Jul 2023</b>	<b>Program Committee Reviewer</b> <b>NeSy 2023 (International Workshop on Neural-Symbolic Learning and Reasoning), Siena, Italy</b> Reviewing paper submissions
<b>May 2023 - May 2023</b>	<b>Program Committee Reviewer</b> <b>NeSy-GeMs@ICLR 2023, Kigali, Rwanda</b> Reviewing paper submissions
<b>Jun 2022 - Feb 2023</b>	<b>Mentor</b> <b>JobIRL L'orientation In Real Life, Paris, France</b> Mentorship and job orientation for students looking to enter the data field
<b>Sep 2022 - Oct 2022</b>	<b>Contributing Author</b> <b>AI Time Journal</b> Author of the article "The Three Pillars of AI: Symbols, Neurons, and Graphs"
<b>Sep 2022 - Oct 2022</b>	<b>Contributing Author</b> <b>The AI Journal</b> Author of the article "The Three Pillars of AI: Symbols, Neurons, and Graphs"
<b>Mar 2022 - Jun 2022</b>	<b>Committee Member</b> <b>The Financial Narrative Processing (FNP) Workshop, Marseille, France</b> Co-chair of FinCausal 2022 Shared Task
<b>Feb 2022 - Feb 2022</b>	<b>Contributing Author</b> <b>Poets Choice</b> Featured author in the "Winter" anthology
<b>Sep 2021 - Feb 2023</b>	<b>Mentor</b> <b>Social Builder, Paris, France</b> Mentor in the Women in Digital (WID) program Mentor in the Adabot program
<b>Mar 2021 - Feb 2023</b>	<b>Corporate Social Responsibility Member</b> <b>Yseop, Paris, France</b>



Member of the CSR team  
Responsible for motivating local and global company initiatives  
Liaison with associations and organizations

**Jan 2020 - Feb 2023**

**Ambassador**

**Data ScienceTech Institute, Paris, France**

Mentorship and job orientation for students

**Contributing Author**

Featured author in notable literary magazines and anthologies:

- The RainPartyDisaster Society
- Talking Soup
- Coffee with Underhill
- Peeking Cat Poetry
- Oddball
- Poetry Potion
- Ten Million Flies
- Kiss My Poetry
- Open Arts Forum
- Clock Radio
- Spillwords
- Hamline Lit Link
- Ink In Thirds
- Poets Choice
- The Pencil App
- Poets Speak
- Red Fez
- Straight Forward Poetry
- Rusted Radishes
- Kissing Dynamite Poetry
- The Dead Magpie
- KREAXXION Review
- The Poetryhood Anthology

**Feb 2021 - Sep 2021**

**Committee Member**

**The Financial Narrative Processing (FNP) Workshop, Virtual Conference**

Co-chair of FinCausal 2021 Shared Task

**Nov 2020 - Present**

**Contributing Author & Lifetime Member**

**Paris Institute for Critical Thinking, Paris, France**

Featured author in "The Thinking Cap"

**Jan 2020 - Dec 2020**

**Committee Member**

**COLING 2020, Virtual Conference**

Co-chair of FinCausal 2020 Shared Task

<b>Jul 2020 - Dec 2020</b>	<b>Journal Editor</b> <b>Kiss My Poetry</b> Content selection and front-page editor
<b>Mar 2020 - Jul 2020</b>	<b>Volunteer</b> <b>Greater Paris University Hospitals - AP-HP, Paris, France</b> Data Science volunteer for COVID-19 data analysis tasks
<b>Jan 2020 - Jan 2020</b>	<b>Contributing Author</b> <b>Unite the World</b> Author of the poem "Written on the Night of the Lebanese Revolution"
<b>Oct 2018 - Oct 2018</b>	<b>Contributing Author</b> <b>Turning Point Books, Beirut, Lebanon</b> Featured author in the "And We Chose Everything" anthology
<b>Jul 2018 - Dec 2022</b>	<b>Ambassador</b> <b>Beirut Poetics</b> Ambassador of the Beirut Poetics Lebanon branch journal Local poetry event organization and engagement of community members Promotion of cultural outreach of poetry
<b>Oct 2016 - Dec 2016</b>	<b>Contributing Author</b> <b>Centum Press</b> Featured author in the "One Hundred Voices: Volume One" anthology

## Awards

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- Second Place in the LLMs4OL challenge at ISWC (2024)
- Third Place in the Scholarly-QALD challenge at ISWC (2023)
- Second Place in the IRSE at FIRE shared task (2023)
- Yseop Company Core Values Award Q3 Trust (2022)
- Second place in the FinSim-3 shared task (2021)
- Yseop Company Core Values Award Q1 Innovation (2021)
- Second Place in HackBordeaux Capgemini challenge (2019)
- Second Place in the National Instruments Elevator Competition (2011)
- Finalist in the International College School Poetry Competition (2010)
- Recipient of the "Philippe Jabre Foundation Scholarship for Excelling Students" (2011-2015)
- Recipient of the "Carlos Ghosn Foundation Scholarship for Excelling Students" (1997-2011)

## Literary Publications

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- Game Theorv (Amazon Kindle Direct Publishing, Sep 13 2024)

- Titans (Amazon Kindle Direct Publishing, Aug 1 2023)
- Memory (Waterton Publishing Company, Aug 16 2022)
- Correspondence (Waterton Publishing Company, Aug 1 2021)
- Stems from the Edge of Silence (Waterton Publishing Company, May 1 2020)
- It's a Big Big World (Waterton Publishing Company, Jul 29 2019)
- Vitality (Waterton Publishing Company, Dec 15 2018)
- Diary In Poems (G&J Productions, Apr 1 2018)
- A Road Away From Home (G&J Productions, Jan 1 2017)

## Certificates

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<b>Aug 2022</b>	<b>IBM</b> Neuro-Symbolic AI Essentials
<b>Jul 2022</b>	<b>Neo4j</b> Certified Professional
<b>May 2022</b>	<b>Udacity</b> Machine Learning DevOps Engineer
<b>Mar 2022</b>	<b>Hasso Plattner Institute</b> Knowledge Graphs
<b>Mar 2022</b>	<b>Neo4j</b> Graph Data Science Certified
<b>Feb 2021</b>	<b>MIT</b> Minds and Machines
<b>Jan 2021</b>	<b>Udacity</b> Deep Reinforcement Learning
<b>Nov 2020</b>	<b>Leiden University</b> Miracles of Human Language: An Introduction to Linguistics
<b>Oct 2020</b>	<b>EPFL (École polytechnique fédérale de Lausanne)</b> BIO465.2x: Computational Neuroscience: Neuronal Dynamics of Cognition
<b>Oct 2020</b>	<b>Saint Petersburg State University</b> Neurolinguistics
<b>Oct 2020</b>	<b>The University of Edinburgh</b> Philosophy and the Sciences: Introduction to the Philosophy of Cognitive Sciences
<b>Oct 2020</b>	<b>National Research University — Higher School of Economics</b> Towards language universals through lexical semantics: introduction to lexical and semantic typology
<b>Aug 2019</b>	<b>CentraleSupélec</b> Analysez vos données textuelles
<b>Jul 2019</b>	<b>Université Grenoble Alpes</b>

**Jul 2017**

Introduction à la linguistique de corpus

**Udacity**

Artificial Intelligence

## Miscellaneous

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■ Music: Electric Guitar

■ Reading: Poetry, Literary Fiction, Philosophy, Psychology, Science Fiction, Thrillers, Classical, Computer Science, Mathematics

■ Sports: Running, Hiking, Tennis

■ French driving license