# Nicolas Hubert, Ph.D.

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## Employment History

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|---|---|---|
| from September 2024 | 🔖 | **Applied Scientist.** Zalando SE, Dortmund, Germany.<br>Working on probabilistic delivery time forecasting for customer fulfillment. |
| 2021 – 2024 (36 months) | 🔖 | **Ph.D. Researcher.** University of Lorraine, Nancy, France.<br>Creator of PyGraft, an open-source Python library (650 stars, 5,000 downloads). |
| 2023 – 2023 (4 months) | 🔖 | **Visiting Ph.D. Researcher.** University of Mannheim, Germany.<br>Data and Web Science Group, worked with Dr. Prof. Heiko Paulheim.<br>Published at K-CAP 2023 (Florida, US) and ESWC 2024 (Greece). |
| 2020 – 2021 (5 months) | 🔖 | **Data Scientist Intern.** Nokia Bell Labs, Paris, France.<br>Worked on an improved version of DBSCAN for anomaly detection. |
| 2019 – 2019 (5 months) | 🔖 | **Machine Learning Scientist Intern.** Credit Suisse, Lausanne, Switzerland.<br>Developed ML models for classifying fraudulent transactions.<br>Deployed the model in production using Django and Flask. |
| 2018 – 2018 (2 months) | 🔖 | **Back-End Developer Intern.** Altervest Ltd, Montreal, Canada. |
| 2017 – 2017 (3 months) | 🔖 | **Data Analyst Intern.** HedgeServ, Luxembourg, Luxembourg. |

## Education

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| 2021 – 2024 | 🔖 | **Ph.D. in Computer Science.** University of Lorraine, Nancy, France.<br>Keywords: *Knowledge Graphs, Graph ML, LLMs, Neuro-symbolic AI.* |
| 2020 – 2020 | 🔖 | **Full-Stack Development Bootcamp.** Le Wagon, Nantes, France.<br>9-week intensive coding bootcamp.<br>Keywords: *HTML, CSS, JavaScript, SQL, Git, and Ruby.* |
| 2016 – 2020 | 🔖 | **M.Sc. in Applied Mathematics for Data Science.** Centrale Nantes, France \| Top 10%.<br>Keywords: *Machine Learning, Probability, Statistics, NumPy, pandas, scikit-learn, and Tensorflow.* |
| | 🔖 | **M.Sc. in Management-Engineering.** Audencia BS, Nantes, France \| Valedictorian.<br>Keywords: *Quantitative Finance, Entrepreneurship, IT, Power BI, Tableau.* |

## Skills

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| Languages | 🔖 | French (native), English (C2), Spanish (C2). |
| Programming | 🔖 | Python (advanced), R (intermediate), C/C++ (intermediate). |
| Frameworks & Libraries | 🔖 | Hugging Face, NumPy, pandas, PyTorch, scikit-learn. |
| IT Tools | 🔖 | MongoDB, MySQL, PostgreSQL, SPARQL, SQL, PowerBI, Tableau. |

## Awards & Publications

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| Best Student Research Paper | 🔖 | 21st Extended Semantic Web Conference (ESWC 2024). |
| Best Resource Paper | 🔖 | 21st Extended Semantic Web Conference (ESWC 2024). |
| Best Research Paper | 🔖 | 23rd Int. Conf. on Knowl. Engineering and Knowl. Management (EKAW 2022). |

# Research Publications

## Journal Articles

1. **Hubert**, **N.**, Monnin, P., Brun, A., & Monticolo, D. (2023). Sem@K: Is my knowledge graph embedding model semantic-aware? *Semantic Web*. 🔗 doi:10.3233/SW-233508

2. **Hubert**, **N.**, Monnin, P., & Paulheim, H. (2023). Beyond transduction: A survey on inductive, few shot, and zero shot link prediction in knowledge graphs (under review). 🔗 doi:10.48550/arXiv.2312.04997

## International Conference Articles

1. **Hubert**, **N.**, Monnin, P., Brun, A., & Monticolo, D. (2024b). Treat different negatives differently: Enriching loss functions with domain and range constraints for link prediction. In *The Semantic Web - 21st Int. Conf., ESWC 2024, Hersonissos, Crete, Greece, May 26 - May 30, 2024, Proceedings*. 🔗 doi:10.48550/arXiv.2303.00286

2. **Hubert**, **N.**, Monnin, P., d'Aquin, M., Brun, A., & Monticolo, D. (2024). Pygraft: Configurable generation of synthetic schemas and knowledge graphs at your fingertips. In *The Semantic Web - 21st Int. Conf., ESWC 2024, Hersonissos, Crete, Greece, May 26 - May 30, 2024, Proceedings*. 🔗 doi:10.48550/arXiv.2309.03685

3. **Hubert**, **N.**, Paulheim, H., Brun, A., & Monticolo, D. (2024). Do similar entities have similar embeddings? In *The Semantic Web - 21st Int. Conf., ESWC 2024, Hersonissos, Crete, Greece, May 26 - May 30, 2024, Proceedings*. 🔗 doi:10.48550/arXiv.2312.10370

4. **Hubert**, **N.**, Paulheim, H., Monnin, P., Brun, A., & Monticolo, D. (2023, December). Schema First! Learn Versatile Knowledge Graph Embeddings by Capturing Semantics with MASCHInE. In *K-CAP 2023 - 12th Int. Conf. on Knowl. Capture*. 🔗 doi:10.1145/3587259.3627550

5. **Hubert**, **N.**, Brun, A., & Monticolo, D. (2022a, October). New Ontology and Knowledge Graph for University Curriculum Recommendation. In *ISWC 2022*. 🔗 doi:https://ceur-ws.org/Vol-3254/paper349.pdf

6. **Hubert**, **N.**, Monnin, P., Brun, A., & Monticolo, D. (2022b, September). New Strategies for Training Knowledge Graph Embeddings: the Recommendation Case. In *EKAW 2022 - 23rd Int. Conf. on Knowl. Engineering and Knowl. Management*. 🔗 doi:10.1007/978-3-031-17105-5_5

## International Workshop Articles

1. **Hubert**, **N.**, Monnin, P., Brun, A., & Monticolo, D. (2022a, October). Knowledge Graph Embeddings for Link Prediction: Beware of Semantics! In *DL4KG@ISWC 2022*. 🔗 doi:https://ceur-ws.org/Vol-3342/paper-4.pdf

## National Conference Articles

1. **Hubert**, **N.**, d'Aquin, M., Monnin, P., Monticolo, D., & Brun, A. (2024, July). PyGraft: un outil Python pour la génération de schémas et graphes de connaissance synthétiques. In *IC2024 : 35èmes journées francophones d'Ingénierie des Connaissances*, La Rochelle, France. Retrieved from 🔗 https://inria.hal.science/hal-04589855

2. **Hubert**, **N.**, Monnin, P., Brun, A., & Monticolo, D. (2024a, July). Enrichissement de fonctions de perte avec contraintes de domaine et co-domaine pour la prédiction de liens dans les graphes de connaissance. In *27e Conférence Nationale en Intelligence Artificielle*, La Rochelle, France. Retrieved from 🔗 https://inria.hal.science/hal-04566996

## National Workshop Articles

1. **Hubert**, **N.**, Brun, A., & Monticolo, D. (2022b, January). Vers un système de recommandation explicable pour l'orientation scolaire. In *EGC 2022*. 🔗 doi:https://hal.science/hal-03559471

# Teaching

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| 2024 – 2024 (16 hours) | 🔖 | **Semantic Web.** University of Lorraine, Nancy, France. M.Sc. Year 1 \| Teaching coordinator: Mathieu d'Aquin |

## Teaching (continued)

2023 – 2024 (48 hours)     **Advanced Mathematics.** Lycée Henri-Poincaré, Nancy, France.
B.Sc. Year 1 | Teaching coordinator: Olivier Binda

2022 – 2023 (64 hours)     **Introduction to Java Programming.** University of Lorraine, Nancy, France.
B.Sc. Year 1 | Teaching coordinator: Vincent Thomas

2021 – 2022 (64 hours)     **Advanced Database Systems.** University of Lorraine, Nancy, France.
B.Sc. Year 1 | Teaching coordinator: Nadia Bellalem