Nicolas Hubert, Ph.D. Candidate in Computer Science

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Employment History

2021 – 2024 (36 months)	**Ph.D. Researcher.** University of Lorraine, Nancy, France. Creator of PyGraft, an open-source Python library (600 stars, 4,000 downloads).
2023 – 2023 (4 months)	**Visiting Ph.D. Researcher.** University of Mannheim, Germany. Data and Web Science Group, worked with Dr. Prof. Heiko Paulheim. Published at K-CAP 2023 (Florida, US) and ESWC 2024 (Greece).
2021 – 2021 (6 months)	**Applied Research Intern.** ERPI Laboratory, Nancy, France. Worked on Explainable Recommender Systems.
2020 – 2021 (5 months)	**Data Scientist Intern.** Nokia Bell Labs, Paris, France. Worked on an improved version of DBSCAN for anomaly detection.
2019 – 2019 (5 months)	**Machine Learning Scientist Intern.** Credit Suisse, Lausanne, Switzerland. Developed ML models for classifying fraudulent transactions. Deployed the model in production using Django and Flask.
2018 – 2018 (2 months)	**Back-End Developer Intern.** Altervest Ltd, Montreal, Canada.

Education

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

Skills

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

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).
Ph.D. of the Year	Nominated for the best Ph.D. award (to be revealed at EGC 2025).

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. (2024). 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? (under review). 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 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

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