Filip Rehburg

Master of Logic Student ILLC, UvA Amsterdam, NL
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Current Education

Institute of Logic, Language and Computation, UvA *Amsterdam, NL*

MSc Logic, September 2025 - Computation Track,
Member of the Diversity Committee

Prior Education

Maastricht University *Maastricht, NL*

BSc (Honors) in Data Science and Artificial Intelligence, June 2023 Thesis: Electrocardiographic Imaging of Synthesized Human Data Using Deep Learning
Advisors: Prof. Ralf Peeters and Dr. Joël Karel

City University of Hong Kong *Kowloon, Hong Kong SAR*

Exchange semester at Department of Data Science

Research Interests

Reasoning, Neuro-Symbolic AI, XAI, Cognitive Science, Knowledge Representation, Philosophy of AI

Relevant Courses

UvA: 5204KNRR6Y	Knowledge Representation and Reasoning	*10/10*
UvA: 5204IEIA6Y	Interpretability & Explainability in AI	*9/10*
UvA: 5314COCO6Y	Computational Complexity	*9/10*
UvA: 5314LDEC6Y	Logic, Data Examples, and Computational Learning Theory	*8.5/10*
UvA: 52041DEL6Y	Deep Learning 1	*8/10*

Experience

11/2026 - 12/2026 **Teaching Assistant BSc AI** *Universiteit van Amsterdam, Amsterdam, NL*

Teaching two weekly tutorials over the span of 8 weeks, grading homework assignments, a midterm exam and a final project in the course Neuro-Symbolic Learning (UvA Course Catalogue).

12/2023 - 12/2024 **Research Assistant Computer Science** *Vrije Universiteit Amsterdam, Amsterdam, NL*

Developing a theoretically grounded approach to implementing rule-level forgetting in Neuro-Symbolic Graph Neural Networks trained to learn a set of representative rules from a Datalog dataset.

12/2023 - 12/2024 **Research Fellow Medical Data Science** *Berlin Institute of Health at Charité, Berlin, DE*

Training classification models to assist diagnosing rare diseases in automated clinical applications using data with strong class imbalance. Codeveloped a framework for storing and exchanging rare disease data to facilitate cross-location analysis. Contributed to the phenopackets and gpsea projects. Authored one and contributed to five publications.

8/2023 **Research Intern Medical Data Science** *Berlin Institute of Health at Charité, Berlin, DE*

9/2021 - 7/2022 **Research Assistant (MaRBLe)** *Ludii Research Group, DACS, UM, Maastricht, NL*

Developed a code completion software for the bespoke Ludii programming language using classical NLP approaches and achieved high accuracy with minimal latency.

Awards and Honors

4/15 Successfully completed MaRBLe Honors program

15/60	Accepted into MaRBLe Honors program: year-long research project on code completion
3/100+	Selected for one out of three spots for an exchange semester in Hong Kong

Research and Publications

Journal

[1] Graefe ASL, Rehburg F, Alkarkoukly S, ..., & Beyan O. RareLink: scalable REDCap-based framework for rare disease interoperability linking international registries to FHIR and Phenopackets. NPJ Genom Med. 2025 Nov 18;10(1):72. doi: 10.1038/s41525-025-00534-z. PMID: 41253795; PMCID: PMC12627670.

[2] Graefe ASL, Hübner MR, Rehburg F, ... & Thun S. An ontology-based rare disease common data model harmonising international registries, FHIR, and Phenopackets. Sci Data. 2025 Feb 8;12(1):234. doi:10.1038/s41597-025-04558-z. PMID: 39922817; PMCID: PMC11807222.

[3] Rekerle L, Danis D, Rehburg F, ... & Robinson PN. GA4GH phenopacket-driven characterization of genotype-phenotype correlations in Mendelian disorders. Am J Hum Genet. 2026 Jan 8;113(1):57-70. doi: 10.1016/j.ajhg.2025.12.001. Epub 2025 Dec 23. PMID: 41443197; PMCID: PMC12824607.

[4] Danis D, Bamshad MJ, Bridges Y, ..., Rehburg F, ... & Robinson PN. A corpus of GA4GH phenopackets: Case-level phenotyping for genomic diagnostics and discovery. HGG Adv. 2025 Jan 9;6(1):100371. doi: 10.1016/j.xhgg.2024.100371. Epub 2024 Oct 10. PMID: 39394689; PMCID: PMC11564936.

Conference

[5] Rehburg F, Graefe A, Hübner M, Thun S. How Interoperability Can Enable Artificial Intelligence in Clinical Applications. Stud Health Technol Inform. 2024 Aug 22;316:596-600. doi: 10.3233/SHTI240485. PMID: 39176813.

[6] Graefe ASL, Rehburg F, Hübner M, Thun S, Beyan O. Review of Key Elements in Developing a Common Data Model for Rare Diseases: Identifying Common Success Factors. Stud Health Technol Inform. 2024 Aug 22;316:1396-1400. doi: 10.3233/SHTI240672. PMID: 39176641.

Poster

[7] Rehburg, F, Peeters, R, Wang, T, van Dam, P M., Bonizzi, P, & Karel, J (2023). Reconstruction of electrograms using a deep learning network trained on simulation data. Abstract from Electrocardiographic Imaging Summit 2023, Valencia, Spain. https://cris.maastrichtuniversity.nl/en/publications/reconstruction-of-electrograms-using-a-deep-learning-network-trai/