



Universiteit
Leiden
The Netherlands

Knowledge extraction from archives of natural history collections

Stork, L.

Citation

Stork, L. (2021, July 1). *Knowledge extraction from archives of natural history collections*. Retrieved from <https://hdl.handle.net/1887/3192382>

Version: Publisher's Version

License: [Licence agreement concerning inclusion of doctoral thesis in the Institutional Repository of the University of Leiden](#)

Downloaded from: <https://hdl.handle.net/1887/3192382>

Note: To cite this publication please use the final published version (if applicable).

Cover Page



Universiteit Leiden



The handle <http://hdl.handle.net/1887/3192382> holds various files of this Leiden University dissertation.

Author: Stork, L.

Title: Knowledge extraction from archives of natural history collections

Issue date: 2021-07-01

Curriculum Vitae

Lise Stork was born on the 8th of April, 1990, in Eindhoven, the Netherlands. She graduated from the Strabrecht College in 2008. In 2012, she moved to Utrecht, where she obtained a BA degree in Communication and Information Studies from the University of Utrecht. Considering a domain change, she moved her studies to the Leiden Institute of Advanced Computer Science (LIACS) of Leiden University, where she eventually, in 2016, graduated cum laude with a MSc degree in Media Technology.

In her pursuit of a second Master's degree in the field of artificial intelligence (AI), she came across another alternative: a PhD research position in the field of AI and digital cultural heritage at the LIACS institute, on the project *Making Sense of Illustrated Handwritten Archives*. Hence, in 2016, immediately after having obtained her Master's degree, Lise joined the consortium as a PhD candidate, conducting her research at the LIACS institute. Since December 2020, she works as a Postdoc in the Knowledge Representation and Reasoning group (KRR) of the Vrije Universiteit Amsterdam (VUA), on the project Meaning and Understanding in Human Centered Artificial Intelligence (MUHAI), with a focus on the development of systems that reason in a human-understandable way.

1st of July, 2021

List of Publications

♦ Journals

- Stork, L., Weber, A., Gassó Miracle, E., Verbeek, F., Plaat, A., Herik, J. van den, and Wolstencroft, K. Semantic annotation of natural history collections. *Web Semantics: Science, Services and Agents on the World Wide Web* (2018), <https://doi.org/10.1016/j.websem.2018.06.002>
- Stork, L., Weber, A., van den Herik, J., Plaat, A., Verbeek, F., & Wolstencroft, K. (2021). Large-scale zero-shot learning in the wild: Classifying zoological illustrations. *Ecological Informatics*, 62, 101222. <https://doi.org/10.1016/j.ecoinf.2021.101222>

♦ Conferences

- Weber, A., Ameryan, M., Wolstencroft, K., Stork, L., Heerlien, M., and Schomaker, L. Towards a digital infrastructure for illustrated handwritten archives. In M. Loannides, editor, *Digital Cultural Heritage*, volume 10605 of *Lecture Notes in Computer Science*, pages 155–166. Springer International Publishing, April 2018. https://doi.org/10.1007/978-3-319-75826-8_13
- Stork, L., Weber, A., Herik, J. van den, Plaat, A., Verbeek, F., and Wolstencroft, K. From handwritten manuscripts to linked data, In: Méndez E., Crestani F., Ribeiro C., David G., Lopes J. (eds) *Digital Libraries for Open Knowledge. TPDL 2018*. volume 11057 of *Lecture Notes in Computer Science*, Springer, Cham https://doi.org/10.1007/978-3-030-00066-0_34
- Stork, L., Weber, A., Van den Herik, J., Plaat, A., Verbeek, F., Wolstencroft, K., Automated semantic annotation of species names in handwritten texts, In: Fuhr, N., Azzopardi, L., Stein, B., Hauff, C., Mayr, P. & Hiemstra, D. (eds.) *Advances in Information Retrieval: 41st European Conference on Information Retrieval Research (ECIR)*, 2019. vol. 11437 of *Lecture Notes in Computer Science*, Springer, Cham. 667-680 14 p. https://doi.org/10.1007/978-3-030-15712-8_43

PUBLICATIONS

♦ Other

- Stork, L., Weber, A., Gassó Miracle, E., and Wolstencroft, K., A workflow for the semantic annotation of field Books and specimen labels, in Biodiversity Information Science and Standards 2: e25839 (2018) <https://doi.org/10.3897/biss.2.25839>

Acknowledgements

Writing up your dissertation during a pandemic is a strange process. For me, not being able to close off such an exceptional time, from the beginning of my Master Media Technology till the end of my PhD, near those who have helped immensely during the whole process, is just plain awkward and unfortunate. Luckily it has also shown me that physical proximity is not a prerequisite for friendship and academic guidance.

I would first of all like to thank my supervisor Katy for her limitless enthusiasm, support, patience, and openness I believe to be quite uncommon. I am very much convinced that these characteristics are what make a great supervisor; at the very least they made my time at Leiden Institute of Advanced Computer Science (LIACS) and my PhD in general especially enjoyable.

I thank Fons and Maarten, who showed me how cool research and AI can be. It is in part because of them that I ventured to pursue a career in academia. I sincerely thank especially Fons for considering me for a PhD position at the time, when I had only just entered the field of computer science and AI.

Jaap I would like to thank for his wise words and critical and amazingly specialised eye for detail, improving my manuscripts every time he touched them. How he steers a consortium meeting, in such a pleasant and fruitful way, is not something just anyone can do.

My promotors, Aske and Fons, I thank for all the time they invested in me, and the good atmosphere they brought to the institute. I still remember the feedback I received from Aske on my first paper, through which I have mastered the art of *getting to the point*. What I have always appreciated in him, is the effort he spends connecting with PhD students and other colleagues on a personal level, not just an academic one, making sure they are mentally fit to work to the best of your abilities. Fons I thank for his great care and advice, how he cares for his very many PhD candidates is admirable.

I had the luck to work within a large, interdisciplinary consortium with an inspiring group of people. Andreas, even though he was, officially, no supervisor of mine, has been a role

ACKNOWLEDGEMENTS

model nonetheless, for his good advice and insightful histories of European naturalists exploring the Indonesian archipelago. He taught me the ins and outs of research amidst different disciplines and people, and most importantly: how to make them work together as one well-oiled machine. Maarten I sincerely thank for his kindness towards new researchers, and strong will to change things for the better. I thank Lissa, for her bright mind, strong character, and critical viewpoint, Eulàlia for her support, expert taxonomic knowledge, and warm welcome during my first week on the project: she and Andreas gave me the best introduction a PhD could wish for, by taking me on a tour through the beautiful collection facilities, the 62 meter high tower of the Naturalis Biodiversity Center. I am thankful for the team in Groningen, Mahya and Lambert for having introduced me to the challenging world of handwriting recognition, without their expertise I would not have been able to identify the various challenges and bottlenecks of manuscript digitisation.

From our industry partner, Brill publishers, I would like to thank Ernest, for his brilliantly philosophical take on things, Etienne for his enthusiasm, technical support, willingness to help and honesty, Marti for his great leadership and the interesting conversations we had in the train to Leiden, and Michiel, for his enthusiasm and great interdisciplinary take on things.

From the Vrije Universiteit Amsterdam (VUA), I would warmly like to thank Victor, Tobias, Chris and Frank as experts from the field of digital heritage and the Semantic Web, for warmly welcoming me in the Semantic Web group when I asked them for expert feedback and guidance. It taught me a great deal about collaboration in science, in a way that I would like to pursue.

During my time at LIACS, I have met many great researchers. Without all of their support, my research would not have been possible. I am grateful for the coffee club, the fish tank, the aquarium, whatever name we gave it in the end. Together, we spent many afternoons drinking (a lot of) coffee, discussing each other's interesting research topics, solving coding puzzles, and playing games. Those weeks when we played 'don't get got' were days to remember, even though they often resulted in socially awkward situations. I sincerely thank the Imaging and BioInformatics group, and the people in my office especially: it has really been great working among such wonderful people. I am also profoundly grateful to other colleagues at the institute that helped and supported me, some of whom I got to know very well during my time at LIACS. Aside from the colleagues at LIACS, I thank the great young researchers I have met during my many trips to conferences and other universities, for the valuable insights they gave me for my own work.

My sincere thanks to the promotion committee: Tinde van Andel, Melissa Terras, Jetty Kleijn, Michael Lew, Victor de Boer, and Andreas Weber, for investing their valuable time in the reading of my dissertation. I feel honoured that such great researchers accepted to do so.

I would like to thank the eScience center for their support in the form of technical support from one of their research software engineers. Arnold Kuzniar contributed greatly to the continuation of my PhD work, through the LINNAE project, and made working from home a bit more bearable. I hope we will encounter each other in the three-dimensional world at least once.

I am profoundly grateful to my dear family and friends: to my parents, Anja and Paul, for their love and support, and for having given me the qualities needed to finish a PhD, to Thijs for the great twin bond we have, and to his amazing girlfriend Mirian, to my parents in law, Jan en Jitske, for treating me like a daughter, to my best friend Viola, for being my role model and motivator during those fifteen years that we know each other, and for our recurring Tuesday *viola-and-lise*-nights that have saved my weeks, thanks to Dirk for having listened to my PhD complaints and doubts, but also for having become such a good friend, and to him and Viola for agreeing to be my paranymphs. Kemilly, I thank for her helpful PhD advice and for having become such a close friend in such a short time. Thanks furthermore to all my other dear friends for their support, with an additional thanks to those that took me on cycling and rock climbing trips for keeping me sane.

Lastly, I would like to thank Serge. Throughout the many years we know each other, he has been so incredibly supportive. I want to thank him for the many adventures we had and inside jokes we share. But, I thank him most for his kindness, for always believing in me when I myself do not, and for making me laugh so much, especially during times when I was so immersed in work I had trouble coming down from my ivory tower.

