Madelon Hulsebos

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I am interested in systems that capture **table semantics** using **machine learning** and their applications in **data management** like data integration, search and validation. My research is motivated by challenges faced in practice.

EDUCATION

University of Amsterdam – Amsterdam, Netherlands
PhD Computer Science   *2020 – present*

Delft Institute of Technology – Delft, Netherlands
MSc Computer Science   *2016 – 2018*
BSc Technology, Policy and Management   *2011 – 2015*

ACADEMIC EXPERIENCE

University of Amsterdam – Amsterdam, Netherlands
PhD Researcher, INDE Lab   *2020 – present*
- Proposed a research agenda aimed at building a dataset and systems for detecting table semantics in practice.
- Advised by Prof. Paul Groth and co-advised by Çağatay Demiralp (industry).

Massachusetts Institute of Technology – Cambridge, Massachusetts, United States
Visiting Collaborator, MIT Media Lab   *2018 – 2019*
- Led and maintained a research project on semantic table understanding.
- Contributed to a data visualization training and benchmarking dataset.

INDUSTRY EXPERIENCE

Sigma Computing – San Francisco, California, United States
Research Intern   *2021 – present*
- Developed a framework and system for deploying semantic table understanding systems in practice.
- Contributed to an interactive business analysis system.
- Published the resulting papers at the Conference of Innovative Data Systems Research.

KPN, HEINEKEN – Rotterdam, Amsterdam
Data Scientist   *2019 – 2021*
- Developed and integrated an ML system for financial forecasting that produced more accurate forecasts.
- Built two ML tools for evaluating marketing campaigns based on causal inference and Bayesian modeling.
- Mentored junior data scientists and analysts, initiated a reading group and implemented scrum processes.
- Gave presentations and tutorials on data validation, software practises and transfer learning.

TEACHING EXPERIENCE

Delft Institute of Technology – Delft, Netherlands
Graduate Teaching Assistant, Pattern Recognition & Web Information Systems groups   *2017 – 2018*
- TA for the MSc courses: Pattern Recognition (IN4085), Web Science & Engineering (IN4252).
- Supported 250+ graduate students throughout projects and lab sessions.
- Evaluated student assignments, projects and presentations.

Aalto University – Helsinki, Finland
Research and Teaching Assistant, Machine Learning for Big Data   *2017*
- Developed assignments for the BSc course "Machine Learning: Basic Principles" (CSE3210) with 500+ students.
- Conducted experiments for semi-supervised learning over networks and presented the work at ICASSP.

ACADEMIC SERVICE

Program committee, WWW (Industry track)	*2022*
Program committee, EDBT (Industry track)	*2022*
Reviewer, NeurIPS (Datasets & Benchmarks track)	*2021*
Organizing committee, SemTab challenge	*2021*

SELECTED PUBLICATIONS

Hulsebos, M., Gathani, S., Gale, J., Dillig, I., Groth, P., Demiralp, C. "Making Table Understanding Work in Practice" [abstract], CIDR (2022).

Hulsebos, M., Demiralp, C, Groth, P. "GitTables: A Large-Scale Corpus of Relational Tables", arXiv preprint arXiv:2106.0725 (2021).

Zhang, D., Suhara, Y., Li, J., Hulsebos, M., Demiralp, C., Tan, W. "Sato: Contextual semantic type detection in tables", in Proceedings of the VLDB Endowment, 2020.

Hulsebos, M., Hu, K., Bakker, M., Zgraggen, E., Satyanarayan, A., Kraska, T., Demiralp, C., Hidalgo, C. "Sherlock: A deep learning approach to semantic data type detection", in ACM SIGKDD. ACM, 2019.

Hu, K., Gaikwad, N., Hulsebos, M., Bakker, M., Zgraggen, E., Hidalgo, C., Kraska, T., Li, G, Satyanarayan, A., Demiralp, C. (2018) "VizNet: Towards a large-scale visualization learning and benchmarking repository", in ACM CHI. ACM, 2019.

BOARD MEMBERSHIP

UniPartners Delft – Delft, Netherlands
Supervisory Board Member   *2017 – present*
- Supervise the financial and strategic positions of the company.
- Implemented structured financial control, KPI oriented leadership and a supervision cycle.

Executive Board Member   *2015 – 2016*
- Controlled and optimized the quality of internal and external products and processes.
- Daily management of projects, contributing to a revenue of over €100 K.
- Moderated the CRM system (Salesforce) and trained 10+ boards.