Rianne M. Schouten, PhD – Resume

City	Eindhoven, the Netherlands
Nationality	Dutch
Mobile Phone	+31 (0) 6 406 405 16
Email	riannemargarethaschouten@gmail.com
LinkedIn	/RianneSchouten
Webpage	RianneSchouten.github.io/
Google Scholar	/RianneSchouten

Experience

Jan 2025 - Present

Postdoctoral researcher
Data Mining Group, Eindhoven University of Technology, the Netherlands

Supervision: Supervision of 2 PhD candidates, supervision of 10 BSc/MSc thesis students.

Funding: Personal NWO take-off grant of €40K to investigate challenges in deploying local pattern search algorithms in e-health / learning analytics.

Feb 2020 - Dec 2024

Doctoral candidate
Data Mining Group, Eindhoven University of Technology, the Netherlands

Research focus: My dissertation presents multiple new pattern mining methodologies for discovering local patterns in heterogeneous, time-variant data. My methodological contributions stand out because they combine statistical concepts with pattern mining techniques, and because they make real-world impact.
Promotors: Prof. Mykola Pechenizkiy, dr. Wouter Duivesteijn.

Collaborations: *"[Rianne] swiftly mastered our terminology and objectives, systematically engaging stakeholders to align goals and identify research directions. Rianne also recognized gaps in expertise and ensured our team was strengthened with the necessary collaborators." (Prof. Pekka Räsänen, clinical neuropsychologist).*

I independently lead multiple fruitful collaborations with experts from various knowledge institutes such as the National Institute of Mental Health and Addiction, the Turku Research Institute for Learning Analytics and multiple hospitals (ZGT, Erasmus MC, CZE).

Funding: Seed money grant of €45K on Better Imputation by Generative Adversarial NeTworks.

Teaching: *"I took a lot of courses last year, but I like your instructions the most. It is not only because of your professional knowledge, but also because of your personality of being kind, patient, responsible." (Jin Ouyang, Master student).*

I lectured in 4 Master level courses (Foundations of Data Mining, Research Topics in Data Mining) and independently lead a track. I received an **Award for excellent student evaluations** twice.

Supervision: Supervision of 10 individual and 15 groups of MSc students.

Project management: I have taken care of deliverables, alignment with the financial department, project progress and timeline management.

Community service: Reviewing for top-level data mining conferences and statistical journals (DAMI, ECML PKDD, EWAF, JRSSB, SiM, BimJ). **Excellent reviewer** at ECML PKDD 2024. **Proceedings Chair** at ECML PKDD 2024.

June 2017 - **Independent statistical consultant**
May 2019 *Trained by Department of Methodology and Statistics, University of Utrecht, the Netherlands*

I supported clinicians at Utrecht Medical Center in doing statistically sound and trustworthy analyses: designing, performing and interpreting statistical analyses and writing the methodological sections of scientific publications.

March 2018 - **Developer Data & Analytics**
Jan 2020 *Samen Veilig Midden-Nederland, the Netherlands*

I created a structured, standardized database for privacy-sensitive information. In addition, I oversaw the system requirements and allocated work to other developers and stakeholders.

April 2017 - **Data Scientist**
Feb 2018 *DPA Professionals - Consultancy - Excellence Program for Data Science*

July 2015, **Teaching Assistant**
July 2016 *Summer School Utrecht, the Netherlands*

I taught in two summer school courses at Utrecht University, the Netherlands. Both courses are at an advanced Master level and cover topics in Survey Research.

"Rianne was a first class assistant at our summer school courses. Not only was all material prepared extremely punctual and without errors, she also got very high student evaluations. I can wholeheartedly recommend Rianne!" (prof. dr. Edith de Leeuw)

Publications

2025 Rosca, A., Bakardzhieva, K., Mainardi, L., Xie, Luyang, Hoogendam, V. & **Schouten, R.M.** Active Learning with Exceptional Model Mining. To be submitted.

2025 Chukwu, E.C., **Schouten, R.M.**, Tabak, M. & Pechenizkiy, M. Recommendations are more than input changes: On the evaluation of counterfactual explanations in TSC. Under review.

2025 van den Biggelaar, L., **Schouten, R.M.**, de Bie, A., Bouwman, A, & Duivesteijn. W. Characterizing the Risk of Atrial Fibrillation in Cardiac Patients with Exceptional Electrocardiogram Phenotypes. Accepted for publication at KDD25.

2025 **Schouten, R.M.** Exceptional Model Mining for Hierarchical Data. PhD thesis.

2024 **Schouten, R. M.** On the role of prognostic factors and effect modifiers in structural causal models. Presented at Causal Representation Learning Workshop NeurIPS.

2024 van den Berg, N. T., Broekgaarden, B. O., Mahieu Dionysia, P., Martens, J. G., Niederle, J., **Schouten, R.M.** & Duivesteijn, W. Generating MNAR missingness in image data, with additional evaluation ofMisGAN. Accepted for presentation at BNAIC/BeNeLearn 2024.

2024 **Schouten, R.M.**, Stevens, G.W.J.M., van Dorsselaer, S.A.F.M., Duinhof, E.L., Monshouwer, K., Pechenizkiy, M. & Duivesteijn, W. Analyzing the interplay between societal trends and socio-demographic variables with local pattern mining: Discovering exceptional trends in adolescent alcohol use in the Netherlands. Accepted for publication in post-proceedings at BNAIC/BeNeLearn 2024.

2024 **Schouten, R.M.**, Duivesteijn, W., Rasanen, P, Paul, J.M., & Pechenizkiy, M. Exceptional Subitizing Range: Exploring Mathematical Abilities of Finnish Primary School Children with Piecewise Linear Regression. In: Proc. ECML PKDD, pp. 66-82.

2023 **Schouten, R.M.**, Tascau, V., Ziegler, G.G., Casano, D., Ardizonne, M., & Erotokritou M.A. Dropping incomplete records is (not so) straightforward. In: Proc IDA, pp. 379-391.

2022 Verhaegh, R.F.A., Kiezebrink, J.J.E., Nusteling, F., Rio, A.W.A, Bendicsek, M.B., Duivesteijn, W. & **Schouten, R.M.** A Clustering-inspired Quality Measure for Exceptional Preferences Mining — Design Choices and Consequences. In: Proc. DS, pp. 429–444.

2022 Van der Haar, J.F., Nagelkerken, S.C., Smit, I.G., van Straaten, K., Tack, J.A., **Schouten, R.M.** & Duivesteijn, W. Efficient Subgroup Discovery Through Auto-Encoding. In: Proc. IDA, pp. 327-340.

2022 **Schouten, R.M.**, Duivesteijn, W. & Pechenizkiy, M. Exceptional Model Mining for Repeated Cross-Sectional Data (EMM-RCS). In: Proc. SDM, pp. 585-593.

2022 **Schouten, R.M.**, Bueno, M.L.P, Duivesteijn, W. & Pechenizkiy, M. Mining Sequences with Exceptional Transition Behaviour of Varying Order using Quality Measures based on Information-Theoretic Scoring Functions. Data Mining and Knowledge Discovery, 36: 379-413.

2021 **Schouten, R.M.** & Vink, G. The dance of the mechanisms: How observed information influences the validity of missingness assumptions. Sociological Methods & Research, 50(3): 1243-1258.

2020 IJsselhof R, Duchateau S, **Schouten R.M.**, Slieker M, Hazekamp M & Schoof P. Long-Term Follow-Up of Pericardium for the Ventricular Component in Atrioventricular Septal Defect Repair. World Journal for Pediatric and Congenital Heart Surgery, 11(6): 742-747.

2019 IJsselhof R.J., Duchateau S.D.R., **Schouten R.M.**, Freund, M.W., Heuser, J., Fejzic, Z., Haas, F., Schoof, P.H. & Slieker, M.G. Follow-up After Biventricular Repair of the Hypoplastic Left Heart Complex. European Journal of Cardiothoracic Surgery, 57(4): 644-651.

2018 **Schouten R.M.**, Lugtig, P. & Vink, G. Generating missing values for simulation purposes: A multivariate amputation procedure. Journal of Statistical Computation and Simulation, 88(15): 1909-1930.

2017 Kappen, I.F.P.M., Bittermann, G.K.P., **Schouten, R.M.**, Bittermann, D., Etty, E., Koole, R., Kon, M., Van der Molen, M. & Breugem, C.C. Long-term mid-facial growth of patients with a unilateral complete cleft of lip, alveolus and palate treated by two-stage palatoplasty: cephalometric analysis. Clinical Oral Investigations, 21: 1801-1810.

2016 de Vries, C.P., **Schouten, R.M.**, Van der Kuur, J., Gottardi, L., & Akamatsu, H. (2016) [Microcalorimeter pulse analysis by means of principle component decomposition. In: Proc. SPIE 9905, Space TElescopes and Instrumentation 2016: Ultraviolet to Gamma Ray, 99055v. DOI: 10.1117/12.2231627

Research visits

2025 Prof. Barbara Hammer @ Bielefeld University (1 week)

2024 Dr. Marcos L.P. Bueno @ Radboud University Nijmegen (1 day)

2016 Prof. Andrew Gelman @ Columbia University (2 months)

Open source contributions

1. Multivariate amputation framework in `R`-function `ampute` in `R`-package `mice`.
2. Python package `pyampute`: a Python library for data amputation.

Education

Feb 2020 -
Jan 2025

PhD in Data Mining
Eindhoven University of Technology, the Netherlands

Title of the dissertation: *Exceptional Model Mining for Hierarchical Data.*
Promotors: Prof. Mykola Pechenizkiy, Dr. Wouter Duivesteijn.

2015 - 2017
MSc in Methodology and Statistics for the Behavioral, Biomedical and Social Sciences
Utrecht University, the Netherlands

GPA: 4.0/4.0.

A non-exhaustive list of studied topics: survey research, multivariate statistics, multilevel modeling, psychometrics, structural equation modeling, Bayesian statistics, clinical trials, survival analysis, missing data methods. See the program website.

My MSc thesis research focused on evaluating missing data methods, including designing experiments and developing methods for generating missing values (i.e., amputation). Supervisors: Prof. Stef van Buuren and dr. Gerko Vink.

Nov 2016 -
Dec 2016

Staff Associate of Professor Andrew Gelman
Department of Statistics, Columbia University in the City of New York

I visited the STAN development team at the Department of Statistics. We developed `parlMICE`, a parallelized version of multiple imputation package `mice` in `R`.

Sep 2015 -
Dec 2015

Internship
SRON, Dutch Institute of Space Research

At SRON, I applied Principal Component Analysis for Physics (SVD) and designed an extensive simulation study. The work resulted in a SPIE conference paper. Grade: 9/10.

2009 - 2012

BSc in Medicine
Utrecht University, the Netherlands

GPA: 3.24/4.0

References

Prof. Pekka Räsänen
Clinical neuropsychologist
Turku Research Institute for Learning Analytics
University of Turku, Finland
pekka.j.rasanen@utu.fi

"[Rianne] swiftly mastered our terminology and objectives, systematically engaging stakeholders to align goals and identify research directions. Rianne also recognized gaps in expertise and ensured our team was strengthened with the necessary collaborators."

Prof. Mykola Pechenizkiy
Promotor
Eindhoven University of Technology
the Netherlands
m.pechenizkiy@tue.nl

"[Rianne] is highly independent and motivated, formulating and successfully pushing forward the research questions resolved in her thesis. Rianne has a strong intuition in search for relevant problem formulations; she grounds her research approach in the specifics of the application domains."

Dr. Wouter Duivesteijn
Co-promotor
Eindhoven University of Technology
the Netherlands
w.duivesteijn@tue.nl

"[Rianne] went far beyond research, [...]. These would be normal activities for a faculty-level academic career, but when you're still working on your PhD this is quite a bit ahead of the curve."