

Catharina (Katrien) Maria van Riet

Netherlands · c.m.v.riet@tue.nl · www.vanriet.me

Profile

As a soft robotics researcher, I am fascinated by pneumatic logic, active shape-change, and wearable devices because of their potential for human-computer interaction. Originally coming from a background in the humanities, I strive to incorporate a diverse and multidisciplinary perspective into my design and engineering practice. I'm passionate about the open-source movement and actively strive to make soft robotics research more accessible to groups who have fewer resources or accessibility options. In my spare time, I enjoy creating projects that involve 3D-printing and electronics, which I publish in open-source repositories such as [GitHub](#) and [Thingiverse](#).

Education and Certificates

- | | |
|-------------|--|
| 2021 – 2023 | Eindhoven University of Technology
MSc Industrial Design – cum laude |
| 2019 – 2021 | Eindhoven University of Technology
BSc Industrial Design – 4.0 GPA
Admittance to the master's after 1.5 years based on grades and portfolio |
| 2013 | The British Council Amsterdam
CELTA (Pass A result) – top 5% result
Certificate in English Language Teaching to Adults |
| 2010 – 2012 | Utrecht University
MA (research) Comparative Literature – cum laude |
| 2007 – 2010 | Utrecht University
BA English Language and Culture – cum laude |

Peer-Reviewed Publications

- | | |
|------|---|
| 2026 | van Riet, C. M. , Zou, S., Delbressine, F. L. M., van Oosterhout, A. & Overvelde, J. T. B. The Soft Circuits Toolkit: Teaching Mechano-Fluidic Logic for Soft Robotics. <i>Soft Robotics</i> . Accepted. |
| 2026 | Di Maggio, F. [*] , van Riet, C. M. [*] , Picella, S., Eggen, B., Hengeveld, B. The Aerophone Kit: A Toolkit for Pneumatic Musical Instrument Design. In <i>Proceedings of the International Conference on New Interfaces for Musical Expression</i> . 2026. |
| 2025 | Nash, J., Sauvé, K., van Riet, C. M. , van Oosterhout, A., Sharma, A., Clarke, C., & Alexander, J. (2025). HydroHaptics: High-Fidelity Force-Feedback on Soft Deformable Interfaces using Hydrostatic Transmission. In <i>Proceedings of the 38th Annual ACM Symposium on User Interface Software and Technology</i> (pp. 1-20). |
| 2024 | Picella, S., van Riet, C. M. , & Overvelde, J. T. B. (2024). Pneumatic Coding Blocks Enable Programmability of Electronics-Free Fluidic Soft Robots. <i>Science Advances</i> , 10(51), eadr2433. |
| 2024 | van Haren, J. S., Verschueren, K., Delbressine, F. L. M., Beijes, M., & van Riet, C. M. (2024). Development And Assessment of a Cyanosis Simulator in a Fetal Manikin for Extra-Uterine Life Support Innovation. In <i>Proceedings of the 2023 10th International Conference on Biomedical and Bioinformatics Engineering</i> , 252–261. |

^{*} All authors contributed equally to this work.

2023 **van Riet, C. M.** *, Khalandi, G. *, & Wijers, J. A *. Landscape Metaphors for Bachelor Design Students' Identity and Vision Development. In *DS 123: Proceedings of the International Conference on Engineering and Product Design Education*.

Submitted Manuscripts

2026 **van Riet, C. M.**, van Haren, J. S., & Delbressine, F. L. M. Development of Limb Actuation and Compliance in a Fetal Manikin for Extra-Uterine Life Support Innovation. *IEEE Journal of Translational Engineering in Health and Medicine*. In review.

2026 van Haren, J.S., van Willigen, B.G., **van Riet, C.M.**, Loor, W.J., van den Broek, J., Sterk, J., Amendola, C., Verschueren, K., Thielen, M.W.H., van der Hout-van der Jagt, M.B., Delbressine, F.L.M. Development of a Hybrid Manikin for Extra-Uterine Life Support Technology Innovation. *BMC Biomedical Engineering*. In review.

Work Experience

2026 – present **PhD guest researcher (4 months) – EPFL**
Reconfigurable Robotics Lab
Supervisor: J. Paik

2024 – present **PhD candidate – TU/e and AMOLF**
Department of Industrial Design (TU/e) and Soft Robotic Matter group (AMOLF)
Subject: Towards Human Interaction in Soft Robotics
Supervisors: A. van Oosterhout, J. T. B. Overvelde, and M. Bruns

2022 – 2023 **Research Intern – AMOLF, Soft Robotic Matter group**
Master's graduation project designing and fabricating a [soft robotics toolkit](#) to teach children and students about (fluidic) circuitry and soft robotics. The toolkit was awarded a 9.5/10 at TU/e and won best Industrial Design master's thesis 2023.

2019 – 2024 **Co-founder – De Taalkamer**
General leadership of the company, hiring and managing new language teachers, developing course materials and online learning environments.

2019 – 2023 **Teaching Assistant – Industrial Design department (TU/e)**
Helping students during lectures and seminars, and occasionally independently teaching seminars for the following courses:

- Creative Programming (20/21 and 22/23)
- Exploratory Making (21/22 and 22/23)

2015 – 2019 **Founder – Lightbulb Moments**
Freelance English and Dutch teaching for groups and individual students. Primary teaching focus: academic writing for PhD students.

2012 – 2015 **English Teacher and Project Manager – Babel**
Teaching courses in general, academic, and business English, both for groups and individual students of all levels. As project manager, overseeing the implementation of the first online learning environment at Babel.

2010 – 2014 **Editor-in-Chief – Frame: Journal of Literary Studies, Volunteer**
Leading and developing editorial staff, setting out a vision and themes for the journal, reviewing submissions.

* All authors contributed equally to this work.

Patents, Awards, and Recognitions

2026	Worldwide Patent WO2026099820A1 van Haren, J. S., van Willigen, B. G., Delbressine, F. L. M., van Riet, C. M. , van den Broek, J. R., Loor, W. J., Sterk, J. Development of a hybrid manikin for extra-uterine life support technology innovations
2025	Honourable Mention “HydroHaptics: High-Fidelity Force-Feedback on Soft Deformable Interfaces using Hydrostatic Transmission”, UIST 2025
2025	Outstanding Arts Exhibit (3rd prize) Soft Robotic Symphony Art Demo, RoboSoft 2025
2024	Best Demo (shared winner) Soft Circuits Toolkit, Dutch Soft Robotics Symposium
2024	Best Industrial Design MSc Thesis (winner) TU/e Awards, Eindhoven University of Technology
2023	Eindhoven Maker Faire Innovation Award (nomination) Soft Circuits Toolkit
2021	Prototyping (winner), Wildcard (winner) Project: <i>Mouscle</i> , a shape-changing mouse to combat RSI. TU/e Contest, Eindhoven University of Technology
2021	Dutch Patent NL2028201B1 de Jongh, M., van Riet, C. M. , & Eisma, E. M. Computer mouse arranged for changing its physical shape for combatting musculoskeletal disorders, MSD, and especially Repetitive Strain Injury, RSI
2010	Best English Language and Culture BA Thesis (winner) Utrecht University

Awarded Funding / Grants

2026	TU/e International Visit Program for PhD Students Eindhoven University of Technology
------	--

Talks and Exhibitions

2026/08/05	IEEE RoboSoft Working Group Diversity and Inclusion in Soft Robotics (online talk) “Towards Diversity and Inclusion in Soft Robotics Education”
2025/04/25	IEEE RoboSoft 2025 (contributed talk) “Towards Integrated Pneumatic Logic Circuits in Soft Robotics”, Lausanne, Switzerland
2025/04/24	IEEE RoboSoft 2025 (exhibit) “Soft Robotic Music”, Lausanne, Switzerland
2023/11/15	Leiden University Contact.vwo Conference (talk) “Soft Circuits Toolkit”, Leiden, the Netherlands
2023/11/16	Fabricademy (online talk) “Recitation Soft Mod Bot”, hosted by Fabricademy
2023/04/21	AMOLF Autonomous Matter Symposium (poster) “Soft Circuits Toolkit: Teaching Analog Soft Circuits to Control Soft Robotic Devices”, Amsterdam, the Netherlands
2023/05/16	Dutch Soft Robotics Symposium (demo) Demonstration of the Soft Circuits Toolkit, University of Twente, the Netherlands

2023/09	Eindhoven Maker Faire (exhibit) Two-day interactive demonstration of the Soft Circuits Toolkit for children of all ages, Eindhoven, the Netherlands
2021 – 2023	Dutch Design Week (exhibit) Exhibition of two individual projects and one group project at the Drivers of Change exposition in 2021, 2022, and 2023, Eindhoven, the Netherlands

Professional Service

Reviewer

2026	Advanced Intelligent Systems, DRS Textiles Intersections
2025	IEEE ICRA, ACM TEI
2024	IEEE ICRA

Committees / Memberships

2026 – present	IEEE RoboSoft Working Group Diversity and Inclusion in Soft Robotics Member
2026 – present	PhD Council Industrial Design TU/e Member
2026 – present	Open Science TUe Member