Niek **Beckers**

Human-Robot Interaction & Robotics Engineer

niekbeckers | niekbeckers | Rotterdam, The Netherlands

Professional summary

Human-robot interaction engineer and researcher. Keen on using my interdisciplinary skills to solve complex problems. Skilled in hardware and software. Eager to expand my technical and leadership toolkit. Critical and analytical thinker, team-player with strong interpersonal skills.

Skills

Robotics	Hardware & software development, human-robot interaction, human factors, tele-operation, human-in-the-loop experiments, control engineering, experience with machine learning
Programming	Python, C/C++, R, LaTeX, TwinCAT, MATLAB/Simulink, git
Soft skills	Critical and analytical thinker, teamwork, interpersonal skills, mentor
Leadership	Grant writing, independent research and development, engineering & scientific project supervision

Experience

Delft University of Technology *Delft, The Netherlands*

Postdoctoral researcher *2019 – present*

- Managing and performing interdisciplinary research projects, including documenting and publishing.
- Leading a team that is developing software for human-automated vehicle interaction experiments.
- Developing and investigating interaction strategies in human-robot teams, specifically how robots can best assist humans in their tasks.
- Collaborating in an interdisciplinary team on meaningful human control over robotics and AI.
- Mentoring and supervising M.Sc. students on topics related to human-robot interaction, robotics, control engineering, and human factors.
- Writing grant proposals for research related to human-robot teamwork.

University of Twente *Enschede, The Netherlands*

Ph.D. researcher *2014–2019*

- Independently managing a research project within a multi-university program including industry partners.
- Visiting researcher at Imperial College London.
- Developing a robot tele-operation setup to conduct my research from scratch, including design, construction, real-time control programming.

Massachusetts Institute of Technology *Cambridge, United States*

Research assistant and graduate student *2013 – 2014*

- Defining research scope and developing measurement hardware for a NASA project on human adaptation to microgravity.
- Accepted into MIT's Aeronautics and Astronautics graduate program (acceptance rate ~10%, GPA 5.0/5.0).

Simendo *Rotterdam, The Netherlands*

Software engineer *2010 – 2013*

- Responsible for developing and deploying virtual reality training software in collaboration with surgeon experts.

Massachusetts Institute of Technology *Cambridge, United States*

Research assistant *2010*

- Supported the development and test of a decision-support tool for UAV operators in scheduling time-constrained tasks.
- Evaluation: outstanding performance.

Education

University of Twente *Enschede, The Netherlands*

Mechanical Engineering, Ph.D. *2019*

- *Focus*: I studied how humans use physical interaction to communicate intentions and learn motor skills together in order to develop intuitive and effective human-robot interaction algorithms.

Technical University Delft *Delft, The Netherlands*

Aerospace Engineering, M.Sc. (cum laude - GPA 8.7/10.0) *2012*

- *Focus*: Improving flight simulator motion algorithms by accounting for limitations in human motion perception.
- *Honours track* (M.Sc. program of excellence). I worked with the world-class Desdemona flight simulator at the Netherlands organization for applied scientific research (TNO).

Technical University Delft *Delft, The Netherlands*

Aerospace Engineering, B.Sc. (cum laude - GPA 8.6/10.0) *2007*

Leadership

Lead software engineer

TU Delft *2019–present*

- Leading a team working on software for human-automated vehicle interaction experiments.

Teaching

TU Delft & University of Twente *2008–present*

- *Course coordinator* embedded programming for the course Biorobotics, 2016
- *Instructor* for the course Human movement control, 2015-2018
- *Teaching assistant* for the courses Aircraft design & Automated flight control system design, 2008-2010

Mentoring & supervising

TU Delft & University of Twente *2016–present*

- Managing and providing scientific supervision for multiple M.Sc. (9) and B.Sc. students (4).

President Aerospace Engineering Student Society

TU Delft *2007–2008*

- Full-time position with scholarship. Society with over 1500 members.

Grants & Awards

2015 **Short-Term Scientific Mission Grant**, €2500, Imperial College London, United Kingdom

2014 **VOLPE Award for best presentation**, Human Factors Engineering Society student conference, Cambridge, United States

2010 **Winner Consultancy Business Course**, The Boston Consulting Group, INSEAD, Paris, France

Languages & hobbies

Languages English (fluent), Dutch (native), German (intermediate working proficiency)

Hobbies Mountaineering, hiking, mountain biking, skiing, tinkering with robots and bicycles