Rafael **Vrecar**

About me

Name:
Rafael Vrecar

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Profile

I am an interdisciplinary HCI researcher with 1.5 years of post master degree experience in Human-Computer Interaction, Usable Security, and additionally over five years practical experience in Software Engineering.

During my studies I have been working as teaching assistant in over ten different lectures within six years, while being head of tutors in three of them.

Education

since 2022	**Informatics** Doctoral Program in Technical Sciences · TU Wien
2020–2022	**Media & Human-Centered Computing** Master program · TU Wien *Thesis:* Increasing User Satisfaction by Detecting Emotions in German-language Human-Robot Conversations with Q.bo One
2016–2020	**Software & Information Engineering** Bachelor program · TU Wien *Thesis:* Conception and Implementation of a "Student Relationship Management" System

Areas of Expertise

- Human-Computer Interaction (HCI) theories and methodologies
- Usable Security
- Human-Robot Interaction (HRI)
- IT Security on Apple's platforms

Grants & Prizes

- Admission as TU Wien TOP Fellow (2024)
- Nomination for the TU Wien Best Poster Award for my Diploma Thesis poster (2022)
- Ars Docendi State Prize Shortlist Nomination in the category "Distance learning methods and their sustainable use" (2021)
- TU Wien Bachelor with Honors (2021)
- TU Wien merit-based scholarship (2019, 2021, 2022)
- Dr. Hans Riegel Awards 2016, second place in Vienna (2016)

Positions

since 2022	**Research Assistant at INSO GmbH** EStablishing SEcurity Group (ESSE) · Inter-university Teaching Holding lectures on security on Apple's platforms, assisting in the organization of the lectures, exercises, etc.
2022–2023	**Project Assistant at TU Wien** HCI Group · Institute of Visual Computing and Human-Centered Technology *Projects:* MAXimizeMe (with Fraunhofer Austria, Wiener Linien & ÖBB, funded by Austrian Chamber of Labor), TREND 2023 (with bee produced GmbH, funded by WWTF & Wirtschaftsagentur Wien), AR in the Factory (PROFACTOR)
2021–2023	**Student Staff & Project Assistant at TU Wien** Center for Technology & Society (CTS) · Rectorate: University's Development and Quality Management Assisting in the fields of research, documentation, public relations, and strategy planning

Positions (ctd.)

2017–2021	**Student Staff at TU Wien**
	Theory & Logic, HCI, Business Informatics, and Industrial Software Groups · Institutes of Logic & Computation, Visual Computing & Human-Centered Technology, and Information Systems Engineering
	Assisting in over ten different lectures, being head of tutors in three of them

Internships

Feb. 2021	**Intern**
	Research Industrial Systems Engineering (RISE)
	Forschungs-, Entwicklungs- und Grossprojektberatung GmbH · Internship
	Development of wireframes and a React prototype with Material-UI for a web-based administration interface
Aug. 2019	**Intern**
	Research Industrial Systems Engineering (RISE)
	Forschungs-, Entwicklungs- und Grossprojektberatung GmbH · Internship
	Development of automated software tests in C++14, integration in continuous integration platform (GitLab)

Affiliations to Research Projects

2021–2023	**MAXimizeMe – XXLMontage für alle**
	Investigator (TU Wien) · funded by Austrian Chamber of Labor
	· Digitalisierungsfonds Arbeit 4.0
	· "Diversitätsfördernde Individualisierung von Arbeitssystemen in der industriellen Baustellenmontage"
	· Conducted by Fraunhofer Austria and TU Wien
	· Involvement:
	– Conceptualizing and leading a user study with over 25 participants; methods: semi-structured interviews, filming and audio-recording the interaction with a tram/bus part with in-situ projections; NASA-TLX, System Usability Scale
	– Analyzing, evaluating, and curating the results of the user study
	– Authoring (first author) of an industrial experiences paper (see below)
	– On-site visits of Wiener Linien's and ÖBB's maintenance facilities
	– Leading two workshops (topics: future & diversity) based on said on-site visits to plan the aforementioned user study
	– Communication with stakeholders
2022–2023	**TREND – Transparency and Trust: Yes, but how?**
	Investigator (TU Wien) · funded by WWTF and Wirtschaftsagentur Wien
	· Roadmaps Digitaler Humanismus 2022
	· Trust and data protection in a B2B platform context (focus: electronics manufacturing)
	· Conducted by bee produced GmbH and TU Wien
	· Involvement:
	– Conceptualizing and leading a user study with over 10 participants; methods: semi-structured interviews and workshops in order to find out their requirements and concerns
	– Analyzing, evaluating, and curating the results of the user study
	– Currently working on a publication of said results for HCSE2024
	– Communication with stakeholders
2022	**AR in the Factory**
	Investigator (TU Wien) · funded by and conducted with PROFACTOR
	· User study on how to use AR in a industrial assembly context
	· Conducted by PROFACTOR GmbH and TU Wien
	· Involvement:
	– Assisting in conceptualizing and conducting a user study with over 15 participants; methods: semi-structured interviews, filming and audio-recording the interaction with an industry assembly work bench with in-situ projections; NASA-TLX, System Usability Scale
	– Assisting in analyzing, evaluating, and curating the results of the user study
	– Co-authoring (second author) of a corresponding full paper (see below)

Publications

Peer Reviewed

- Aaron Wedral, **Vrecar, Rafael**, Gerhard Ebenhofer, Thomas Pönitz, Paul H. Wührer, Astrid Weiss, and Gernot Stübl. "Spatial Augmented Reality in the Factory: Can In-Situ Projections Be Used to Communicate Dangers and Health Risks?" In: *Human-Computer Interaction – INTERACT 2023*. Ed. by José Abdelnour Nocera, Marta Kristín Lárusdóttir, Helen Petrie, Antonio Piccinno, and Marco Winckler. Cham: Springer Nature Switzerland, 2023, pp. 574–594. ISBN: 978-3-031-42283-6. DOI: 10.1007/978-3-031-42283-6_31

- **Vrecar, Rafael**, Markus Steinlechner, Patrick Rupprecht, Aaron Wedral, Marlies Negele, Maciej Palucki, Brigitte Ratzer, and Astrid Weiss. "How to Bring Diversity into Industry: Industrial Experiences in Public Transport Repair and Maintenance". In: *Human-Computer Interaction – INTERACT 2023*. Ed. by José Abdelnour Nocera, Marta Kristín Lárusdóttir, Helen Petrie, Antonio Piccinno, and Marco Winckler. Cham: Springer Nature Switzerland, 2023, pp. 267–272. ISBN: 978-3-031-42293-5. DOI: 10.1007/978-3-031-42293-5_20

- Astrid Weiss, **Vrecar, Rafael**, Joanna Zamiechowska, and Peter Purgathofer. "It's Only a Bot! How Adversarial Chatbots can be a Vehicle to Teach Responsible AI". in: *Responsible Artificial Intelligence: Challenges for Sustainable Management*. Ed. by René Schmidpeter and Reinhard Altenburger. Cham: Springer International Publishing, 2023, pp. 235–250. ISBN: 978-3-031-09245-9. DOI: 10.1007/978-3-031-09245-9_12

- Astrid Weiss, **Vrecar, Rafael**, Joanna Zamiechowska, and Peter Purgathofer. "Using the Design of Adversarial Chatbots as a Means to Expose Computer Science Students to the Importance of Ethics and Responsible Design of AI Technologies". In: *Human-Computer Interaction – INTERACT 2021*. Ed. by Carmelo Ardito, Rosa Lanzilotti, Alessio Malizia, Helen Petrie, Antonio Piccinno, Giuseppe Desolda, and Kori Inkpen. Cham: Springer International Publishing, 2021, pp. 331–339. ISBN: 978-3-030-85613-7. DOI: 10.1007/978-3-030-85613-7_24

Others

- **Vrecar, Rafael**. *Student Review: "Sustainability" – a Term with Various Meanings and Implications*. Vienna, 2023. URL: https://repositum.tuwien.at/handle/20.500.12708/192255

- **Vrecar, Rafael**. *Dare to Care – Designing Differently, Imagining Collaboratively*. Vienna, 2023. URL: https://repositum.tuwien.at/handle/20.500.12708/192253

- Ana-Catalina Sabie, Katharina Brunnmayr, Kristina Weinberger, Renée Sophie Singer, **Vrecar, Rafael**, and Katta Spiel. "This is not the new normal: studying during a pandemic". In: *Interactions* 27.4 (July 2020), pp. 12–15. ISSN: 1072-5520. DOI: 10.1145/3406111

Teaching

- Holding delivery talks and exam supervisions in over ten different courses.

- Head of tutors in three of them.

- Heading student relations in three of them.

- (Co-)Authoring and holding the following lectures from winter term 2021 onward with ESSE at TU Wien:

    - (since 2021w) macOS Security Concepts – *Introduction to Security (3 ECTS, BSc, mandatory)*
    - (since 2023w) Usable Security & Trust – *Introduction to Security (3 and 6 ECTS, BSc, mandatory)*
    - (since 2023w) Security Implications of Typing in Programming Languages – *ibid.*
    - (since 2022s) Introduction to iOS Security – *Mobile Security (3 ECTS, BSc, elective)*
    - (since 2022s) iOS Environment Checks – *ibid.*
    - (since 2022s) Advanced macOS Security Concepts – *Security for Systems Engineering (3 ECTS, BSc, elective)*

Academic Service

- Reviewing a full paper for the 16th ACM SIGCHI Symposium on Engineering Interactive Computing Systems (2024)

- Mentor for first term informatics students of TU Wien (TU Wien mentoring program, 2018–2019)