

Rafael M.L. Silva

University of Washington

PhD Candidate, Human Centered Design and Engineering, Seattle – WA

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EDUCATION

- 2024(*Expected*) Doctor of Philosophy (**Ph.D.**), Human Centered Design and Engineering;
University of Washington, Seattle, WA;
Advised by Dr. Daniela Rosner
- 2021 Master of Science (**M.S.**), Human Centered Design and Engineering;
University of Washington, Seattle, WA;
- 2014 Master of Business and Technology (**M.B.T.**), Internet Technology;
University of Georgia, Athens, GA;
- 2011 Bachelor of Science (**B.S.**), Computer Science;
Federal University of Viçosa, MG - Brazil

TEACHING EXPERIENCE

- 2024/Spring **Strategic Influence (TCMP546), Instructor**
I developed the curriculum and delivered lectures in the master of community planning program. In this course, students learned how to use human-centered design techniques as a method of inquiry for community engagement. Through the lens of critical pedagogy, students worked with a community partner to understand socially complex environments and to develop artifacts that leveraged existing grassroots initiatives; University of Washington, Tacoma - WA
- 2022/Fall **User-Centered Design (HCDE518), Teaching Assistant**
2023/Fall I assisted and delivered lectures to graduate students to learn thinking like user-centered designers and carry out activities that are key to design projects. The course fundamentally explored the user-centered design paradigm from a broad perspective, emphasizing how user research and prototype assessment can be integrated into different phases of the design process; University of Washington, Seattle - WA
- 2023/Spring **MS Capstone (HCDE592/593), Teaching Assistant**
2023/Winter I was part of the teaching team that mentored master students to work with sponsors
2024/Winter in developing a Human-Centered Design final project. The curriculum involved integrating knowledge and skills acquired during the Master program to define

capstone topics, form project teams, develop applied concepts, and artifacts.

2022/Spring 2021/Spring 2020/Fall 2020/Spring 2019/Fall	Introduction to Programming (HCDE524), <u>Instructor</u> I worked as the leading instructor for a graduate level class in foundations of computing that introduced students to core concepts in programming using interactive graphics applications; University of Washington, Seattle - WA
2021/Winter	Foundations of Human Centered Design and Engineering (HCDE300), Teaching Assistant Assisted the main lectures and independently coordinated workshops for undergraduate students. The course examined principles and practices of human centered design and engineering, including overview of conceptual aspects of design, particularly to social contexts and its legal, ethical, and cultural implications; University of Washington, Seattle - WA
2021/Summer	Internet of Things (HCDE598), Teaching Assistant I helped to deliver a special topics class to teach design students to develop Internet of things devices and cloud-based infrastructure; University of Washington, Seattle - WA
2017/2018	Capstone Project in Mechanical Engineering (BME495 & BME496), Technical Mentor Worked in partnership with the Mechanical Engineering degree coordinator, Dr. Pierre Mourad, to advise technical and design feasibility of multiple capstone projects; University of Washington, Bothell - WA
2017/Spring	Summer Camp Outreach (BEDUC592), Teaching Assistant I was a Teaching Assistant in the workshop to prepare Computer Science students to teach VR-coding Summer camps for middle school children; University of Washington Bothell - WA
2016/June	Introduction to Arduino, <u>Instructor</u> , workshop for Undergraduate Students at UWB's Makerspace, Bothell – WA, June 2016.
2016/Spring	Special Topics: Introduction to Virtual Reality (BEE499), <u>Instructor</u> I developed the curriculum and taught undergraduate students to design, develop, and evaluate the effectiveness of Virtual Reality experiences; University of Washington, Bothell - WA

PROFESSIONAL AND ACADEMIC EXPERIENCE

2024 - <i>Present</i>	Instructor , School of Urban Studies, University of Washington, Tacoma - WA
2018 - 2024	Instructor, Teaching and Research Assistant , Human Centered Design and Engineering Department,

- University of Washington, Seattle - WA
- 2018 - 2021 **Makerspace Operations Manager**, Academic Affairs Department,
University of Washington, Bothell - WA
- 2017 **Research Engineer**, School of STEM,
University of Washington, Bothell - WA
- 2015 - 2016 **Advanced Systems Engineer**, Computing Software & Systems,
University of Washington, Bothell - WA
- 2013 - 2015 **Graduate Research Assistant**, College of Engineering,
University of Georgia, Athens - GA
- 2011 - 2013 **Unix Engineer**, XenServer Support Team,
Citrix Systems, Alpharetta – GA
- 2006 - 2011 **Undergraduate Research Assistant**, Computer Science Department,
Federal University of Viçosa, MG – Brazil
- 2001 **Systems Administrator**,
Cheque-Pre Consultants Credit Risk Analysis, Sao Paulo, SP - Brazil

PUBLICATIONS

Rafael M.L. Silva, Ana Maria Cardenas Gasca, Joshua A Fisher, Erica Principe Cruz, Cinthya Jauregui, Amy Lueck, Fannie Liu, Andrés Monroy-Hernández, and Kai Lukoff. 2024. With or Without Permission: Site-Specific Augmented Reality for Social Justice. In Extended Abstracts of the 2024 CHI Conference on Human Factors in Computing Systems (CHI EA '24). Association for Computing Machinery, New York, NY, USA, Article 497, 1–7. <https://doi.org/10.1145/3613905.3636283>

Rafael M. L. Silva, Erica Principe Cruz, Daniela K. Rosner, Dayton Kelly, Andrés Monroy-Hernández, and Fannie Liu. 2022. Understanding AR Activism: An Interview Study with Creators of Augmented Reality Experiences for Social Change. In Proceedings of the 2022 CHI Conference on Human Factors in Computing Systems (CHI '22). Association for Computing Machinery, New York, NY, USA, Article 630, 1–15. <https://doi.org/10.1145/3491102.3517605>

Sarah E. Fox, **Rafael M.L. Silva**, and Daniela K. Rosner. 2018. Beyond the Prototype: Maintenance, Collective Responsibility, and Public IoT. In Proceedings of the 2018 Designing Interactive Systems Conference (DIS '18). Association for Computing Machinery, New York, NY, USA, 21–32. <https://doi.org/10.1145/3196709.3196710> (**Best Paper Honorable Mention Award.**)

LaPiana N, Duong A, Lee A, Alschitz L, **Silva R**, Early J, Bunnell A, Mourad P A Case Study of the Acceptability of An Augmented Reality Game Deployed on a Cell Phone for

Rehabilitation of Stroke Patients With Upper Limb Deficits JMIR Rehabilitation and Assistive

Liu, Yusha MD, PhD; **Silva, Rafael M. L.**; Friedrich, Jeffrey B. MD; Vedder, Nicholas B. MD; Kao, Dennis S. MD; Mourad, Pierre D. PhD; Bunnell, Aaron E. MD Abstract 11: Surface Electromyography-Based Gamification Therapy For Rehabilitation Of Upper Extremity Weakness: An Acceptability Study, Plastic and Reconstructive Surgery - Global Open: April 2020 - Volume 8 - Issue 4S - p 8
doi: 10.1097/01.GOX.0000667108.93983.47

Ferrarezi, R. S.; Dove, S. K. ; van Iersel, M. W. ; **Silva , R. M. L. .** “Low-cost Open-source Microcontrollers to Build Automated Irrigation and Fertigation Systems Using Soil Moisture and Electrical Conductivity Sensors”. In: American Society of Horticultural Science Conference, New Orleans - US , 2015.
<https://ashs.confex.com/ashs/2015/webprogram/Paper21465.html>

Silva, R. M. L. ; Ribeiro, G. A. ; Ditmore, A. E. ; Romano, M. A. A. ; Meireles, W. D. M. . Online: Paradise: A Wireless sensor network applied in the prevention and detection of forest fires.. In: VI International Conference on Forest Fire Research, 2010, Coimbra - Portugal, 2010.

Silva, R. M. L.; Ferreira, R.S.; Silva, P. H. A. . UAI! (Interface de Automação Universal). In: Free Software Workshop, 2008, Porto Alegre - Brazil. International Free Software Forum, 2008. ISBN 8589344-50-9
<http://wsl.softwarelivre.org/2008/0010/>

SERVICE

Workshop Organizer at ACMCHI2024.

Reviewer for alt.CHI2024, DIS2023, CSCW2023, DIS2023, CHI2021.

Reviewer for 2024 UW's MS in HCDE applications.

Student Advisory Council Member of University of Washington's 2021-22 Husky Experience

Co-Organizer of 2017 Seattle's Immersive Healthcare Hackathon.

Mentor at 5th Seattle VR Hackathon, UW Seattle, 2017.

Mentor at 1st Garden Hackathon, UW Bothell, 2016.