

Sebastian S. Rodriguez

Curriculum Vitae

Software Engineer and Researcher
PhD in Computer Science
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sebas.me

RESEARCH INTERESTS

Human-automation/AI interaction, virtual and extended reality, game design and development, human factors, machine learning, cognitive science

EDUCATION

- 2016 – 2022 **University of Illinois at Urbana-Champaign**, Urbana, IL
Doctor of Philosophy in Computer Science
Dissertation: “Good Enough” Agents: Investigating Designed Imperfections in Human-AI Teams Across Parallel Domains
Advisor: Alex Kirlik, PhD
- 2012 – 2016 **Northwestern University**, Evanston, IL
Bachelor of Science in Computer Engineering

EXPERIENCE

- 2022 – Present **Meta**, Remote
Analytics Engineer, f.k.a. Research Data Scientist
Providing quantitative engineering, data-driven decisions, and large-scale inference pipelines for privacy-aware infrastructure supporting Meta’s products
- 2021 **Meta**, Remote
Quantitative UX Research Intern (Host: Daniel Gruner)
Influenced early design decisions of Messenger through large-scale quantitative surveys and data analytics
- 2018 – 2020 **U.S. DEVCOM Army Research Laboratory**, Aberdeen, MD
Research Fellow (Advisors: Derrik Asher, PhD and Erin Zaroukian, PhD)
Investigated the effects of complacency and emergent collaboration in heterogeneous teams consisting of humans and autonomous agents [C-2, 3, 4, 5, 6; J-2]
- 2018 **U.S. DEVCOM Army Research Laboratory**, Playa Vista, CA
Research Intern (Host: James Schaffer, PhD)
Investigated the effects of complacency in knowledge and judgment for recommendation and game-based systems [C-1]
- 2016 – 2018 **University of Illinois at Urbana-Champaign**, Urbana, IL
Graduate Research Assistant (Advisor: Alex Kirlik, PhD)
Developed an API for devices communicating with a ROS framework which controls aerial drones in coordinated behavior to help elderly users retain independence

- 2015 – 2016 **Northwestern University**, Evanston, IL
Undergraduate Research Assistant (Advisor: Corey Brady, PhD)
Programmed hackable hardware for teaching network topology through participatory simulations in Chicago middle and high schools [J-1]
- 2015 **Washington State University**, Pullman, WA
Research Experience for Undergraduates Intern (Host: Anurag Srivastava, PhD)
Implemented fault and failure detection algorithms for phasor measurement units in smart electric grids

SKILLS

Quantitative Methods: inferential/summary statistics, factor analysis/mediation analysis, user modeling, machine learning, survey design

Qualitative Methods: user interviews, usability testing

Programming/Frameworks: Python, R, NumPy/pandas, scikit-learn, TensorFlow, C++, C#, Unity, Java, PHP, SQL, Presto, Hive/Spark, git, Mercurial, CI/CD

Languages: English, Spanish (native)

PEER-REVIEWED CONFERENCE PUBLICATIONS

- C-9 GazePointAR: A Context-Aware, Multimodal Voice Assistant for Pronoun Disambiguation in Wearable Augmented Reality
Lee J., Wang J., Brown E., Chu L., **Rodriguez S.**, Froelich J. (in submission)
ACM Symposium on User Interface Software and Technology (UIST) Proceedings
- C-8 RemoteLab: A VR Remote Study Toolkit
Lee J., Natarajan R., **Rodriguez S.**, Panda P., Ofek E. (2022)
ACM Symposium on User Interface Software and Technology (UIST) Proceedings
- C-7 What's This? A Voice and Touch Multimodal Approach for Ambiguity Resolution in Voice Assistants
Lee J., **Rodriguez S.**, Natarajan R., Chen J., Deep H., Kirlik A. (2021)
International Conference on Multimodal Interaction (ICMI) Proceedings
- C-6 Emergent Heterogeneous Strategies from Homogeneous Capabilities in Multi-Agent Systems
Fernandez R., Zaroukian E., Humann J., Perelman B., Dorothy R., **Rodriguez S.**, Asher D. (2020)
World Congress in Computer Science, Computer Engineering, and Applied Computing (CSCE) Proceedings
- C-5 Multi-Agent Collaboration with Ergodic Spatial Distributions
Asher D., Zaroukian E., Perelman B., Perret J., Fernandez R., Hoffman B., **Rodriguez S.** (2020)
Society of Photo-Optical Instrumentation Engineers (SPIE) Defense + Commercial Sensing Proceedings
- C-4 Measuring Complacency in Humans Interacting with Autonomous Agents in a Multi-Agent System
Rodriguez S., Chen J., Deep H., Lee J., Asher D., and Zaroukian E. (2020)
Society of Photo-Optical Instrumentation Engineers (SPIE) Defense + Commercial Sensing Proceedings

- C-3 Multi-Agent Coordination Profiles Through State Space Perturbations
Asher D., Garber-Barron M., **Rodriguez S.**, Zaroukian E., and Waytowich N. (2019)
International Conference on Computational Science and Computational Intelligence (CSCI) Proceedings
- C-2 Algorithmically Identifying Strategies in Multi-Agent Game-Theoretic Environments
Zaroukian E., **Rodriguez S.**, Barton S., Schaffer J., Perelman B., Waytowich N., Hoffman B., and Asher D. (2019)
Society of Photo-Optical Instrumentation Engineers (SPIE) Defense + Commercial Sensing Proceedings
- C-1 Knowledge Complacency and Decision Support Systems **[Best Paper Award]**
Rodriguez S., Schaffer J., O'Donovan J., and Höllerer T. (2019)
Cognitive and Computational Aspects of Situation Management (CogSIMA) Proceedings

PEER-REVIEWED JOURNAL PUBLICATIONS

- J-2 Mediating Agent Reliability with Human Trust, Situation Awareness, and Performance in Autonomously-Collaborative Human-Agent Teams
Rodriguez S., Zaroukian E., Hoyer J., Asher D. (2022)
Journal of Cognitive Engineering and Decision Making, Special Issue on Human-Agent Teaming
- J-1 All Roads Lead to Computing: Making, Participatory Simulations, and Social Computing as Pathways to Computer Science
Brady C., Weintrop D., Anton G., Orton K., **Rodriguez S.**, and Wilensky U. (2016)
IEEE Transactions on Education

TEACHING EXPERIENCE

- SP21 **ENG 177: Spatial Visualization**
College of Engineering, University of Illinois at Urbana-Champaign
- FA21 **CS 225: Data Structures**
Department of Computer Science, University of Illinois at Urbana-Champaign
- SP21 **CS 565: Human-Computer Interaction**
Department of Computer Science, University of Illinois at Urbana-Champaign
- FA20 **CS 225: Data Structures**
Department of Computer Science, University of Illinois at Urbana-Champaign
- SP20 **CS 225: Data Structures**
Department of Computer Science, University of Illinois at Urbana-Champaign
- SU20 **CS 498: Data Visualization**
Department of Computer Science, University of Illinois at Urbana-Champaign
- FA18 **CS 498: Experimental Methods of Human Computer Interaction**
Department of Computer Science, University of Illinois at Urbana-Champaign
- SP16 **EECS 395: Tangible Interaction Design and Learning**
Department of Electrical Engineering and Computer Science, Northwestern University
- WI16 **EECS 330: Human Computer Interaction**
Department of Electrical Engineering and Computer Science, Northwestern University
- FA15 **EECS 111: Fundamentals of Computer Programming I**
Department of Electrical Engineering and Computer Science, Northwestern University

SP15 **EECS 214: Data Structures and Data Management**
Department of Electrical Engineering and Computer Science, Northwestern University

MENTORING

- 2023 **Sophia Sorensen**
San Jose State University BS in Computer Science, 2023
- 2022 **Juan Sebastian Rodriguez**
Nova Southeastern University MS in Information Systems, 2022
- 2022 **Gabriella Xue**
University of Illinois at Urbana-Champaign BS/MS in Computer Science, 2023
(next: Software Engineer @ C3.ai)
- 2022 **Osamu Fujimoto**
Georgia Institute of Technology MS in Computer Science, 2023
(next: Software Engineer @ Venmo)
- 2021 **Drshika Asher**
University of Illinois at Urbana-Champaign BS in Computer Science
- 2020 **Sarah Shaw**
University of Illinois at Urbana-Champaign BS in Computer Science and Statistics, 2022
- 2020 **Ziyuan Wei**
University of Illinois at Urbana-Champaign BS/MS in Computer Science and Statistics, 2022
(next: Software Engineer @ Meta)
- 2019 **Jaewook Lee**
University of Illinois at Urbana-Champaign BS in Computer Science, 2022
(next: PhD @ University of Washington)
- 2019 **Jacqueline Chen**
University of Illinois at Urbana-Champaign BS in Computer Science, 2022
(next: Software Engineer @ Gap Inc.)
- 2019 **Harsh Deep**
University of Illinois at Urbana-Champaign BS in Computer Science and Statistics, 2022
(next: Software Engineer @ Modern Treasury)
- 2017 **Amber Zhang**
University of Illinois at Urbana-Champaign BS in Computer Science, 2018
(next: Software Engineer @ Pure Storage)
- 2017 **Wyatt McAllister**
University of Illinois at Urbana-Champaign MS in Electrical and Computer Engineering, 2018
(next: PhD @ University of Illinois at Urbana-Champaign)
- 2017 **Ambika Dubey**
University of Illinois at Urbana-Champaign BS in Computer Science, 2018
(next: Software Engineer @ Microsoft)

AWARDS AND HONORS

- 2021 **ACM ICMI 2021 – Outstanding Review Award**
Recognized for an outstanding peer review for a conference submission
- 2021 **Illinois Scholars Undergraduate Research Program Mentor Funding**
UIUC grant to support an undergraduate research apprentice
- 2020 **Apple Scholars in AI/ML University Nomination**
Nominated by the Graduate College to represent UIUC at Apple's fellowship competition

- 2020 **Richard Tapia Celebration of Diversity in Computing Travel Grant**
UIUC travel grant to attend the 2020 Tapia Conference
- 2019 **U.S. Army CDC Army Research Laboratory Journeyman Fellowship**
Prestigious 1-year fellowship to conduct dissertation research with ARL
- 2019 **IEEE CogSIMA 2019 – Best Paper Award**
Knowledge Complacency and Decision Support Systems [C-1]
- 2018 **UIUC Certificate of Recognition for Academic Excellence**
UIUC award for excellence in research, teaching, or service
- 2016 **UIUC Graduate College Distinguished Fellowship**
UIUC award to support graduate studies with 2 years of funding
- 2016 **Illinois Sloan Scholar, Alfred P. Sloan Foundation's Minority PhD Program**
Merit-based award for incoming minority PhD students

SERVICE

Reviewing	<p><i>Conferences (* denotes reviewing award)</i></p> <ul style="list-style-type: none"> • HFES 2023 • ICMI 2021*, 2022 • MobileHCI 2022 • IEEE VR 2021 • CSCW 2021 • CHI 2021 • CHI PLAY 2019, 2020, 2021 <p><i>Journals</i></p> <ul style="list-style-type: none"> • Human Factors and Ergonomics Society • Production and Operations Management
Development	<p>Human Factors and Ergonomics Society, Member (2021 – 2022)</p> <p>UIUC Chapter</p> <p>Tau Beta Pi Engineering Honor Society, Member (2020 – 2022)</p> <p>Illinois Alpha Chapter</p> <p>Society of Hispanic Professional Engineers, Member (2016 – 2022)</p> <p>UIUC Chapter</p> <p>Society of Hispanic Professional Engineers, Internal Vice President (2015 – 2016)</p> <p>Society of Hispanic Professional Engineers, Member (2012 – 2015)</p> <p>NU Chapter</p>
Education	<p>UIUC Illinois Scholars Undergraduate Research Program 2021</p> <p>UIUC Computer Science Graduate Ambassador 2016, 2017, 2018</p> <p>Alfred P. Sloan UIUC Mentorship Program 2017</p>
Planning	<p>Alfred P. Sloan UIUC Mini-Conference 2019</p>

Last updated: May 3, 2023