

# Sebastian S. Rodriguez

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*Human-Computer Interaction @ UIUC*

## EDUCATION

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**University of Illinois at Urbana-Champaign**, Urbana, IL ~May 2022  
*Doctor of Philosophy in Computer Science, GPA: 3.97 / 4.00*  
Concentration: Human-Computer Interaction  
Advisor: Alex Kirlik

**Northwestern University**, Evanston, IL Jun 2016  
*Bachelor of Science in Computer Engineering*

## SKILLS

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**Programming/Frameworks:** C#, Unity, Python, R, NumPy/pandas, scikit-learn/TensorFlow, C++, Java, SQL/Hive, CI/CD

**Research Methods:** inferential/summary statistics, mediation analysis, regression, machine learning, survey design, user interviews, usability testing

**Languages:** English, Spanish (fluent)

## WORK EXPERIENCE

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**Facebook** – Quantitative UX Research Intern Jun 2021 – Aug 2021

- Worked cross-functionally with design, management, and engineering to identify research topics. Communicated recommended action items to improve product and strategy within the team
- Influenced early design decisions of Messenger through large-scale quantitative surveys and data analytics (*Python/SQL/Hive*)
- Collaboratively designed and implemented an award-winning project for an internal hackathon (*Unity/C#*)

**U.S. DEVCOM Army Research Laboratory** – Research Fellow Aug 2018 – Dec 2020

- Conducting an online controlled study with 1200+ participants testing user engagement and complacency in game-based AI (*Python*) and deep reinforcement learning agents (*TensorFlow*)
- Designed a customizable environment (*Unity/C#*) for continuous simulation tasks (e.g., pursuit and capture the flag) to operationalize and validate autonomous drone performance
- Developed a statistical analysis library (*Python*) to extract, cluster, and visualize movement patterns from time-series data generated by human interaction with autonomous AI agents

**U.S. DEVCOM Army Research Laboratory** – Research Intern May 2018 – Aug 2018

- Executed an online controlled study testing for knowledge loss in users interacting with AI/ML-based recommender systems in movie suggestion and game-theoretic contexts
- Conducted structural equation modeling on 1000+ participants to evaluate hypotheses, resulting in a Best Paper Award at a renowned academic conference (*R*)

- University of Illinois at Urbana-Champaign** – Graduate Research Assistant Aug 2016 – May 2018
- Maintained an internal laboratory-wide API for devices requesting feedback control from multiple synchronized aerial drones (*Python*)
  - Developed a sample Android application to demonstrate API applicability, and presented the proof of concept to 70+ researchers and associates (*Java*)

## SELECTED PROJECTS

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**Aurora** – [github.com/antonpup/Aurora](https://github.com/antonpup/Aurora) (1.3k stars) C#, hardware APIs  
Contributor of an open-source utility that synchronizes hardware with RGB lighting across assorted brands. Added compatibility with EVGA devices by reverse engineering the hardware's I<sup>2</sup>C protocol, among other contributions

**Chromatone** – [youtu.be/-SmzZ0YtzQc](https://youtu.be/-SmzZ0YtzQc) C#, Unity, Oculus Rift  
Lead programmer and designer of an immersive virtual reality application that allows interaction with music stems through sound modulation, displaying amplitude, tempo, and modulations in a particle visualization

**Mizuna** – [github.com/srodriguez1850/Mizuna](https://github.com/srodriguez1850/Mizuna) Python  
Creator of a small library that allows programmatic synchronization between IPython/Jupyter notebook visualizations and git repositories (e.g., Overleaf). Published on GitHub with a CI/CD pipeline

**TIDALsign** – <https://youtu.be/j-NQ40gS5eM> Arduino C++, Processing, hardware  
Lead programmer of a microcontroller-based sensory glove aiming to teach American Sign Language through haptic feedback. Used serial communication to transfer data and detect correct finger flexions heuristically

## MENTORING/TEACHING/SERVICE

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**Head Teaching Assistant – UIUC CS 225: Data Structures** Jan 2020 – Present  
Leading a staff of 50+ teaching assistants in an introductory-level programming class. Preparing labs and machine problems, leading lab sections and office hours, and contributing to course content

**Kirlik HCI Lab Head** Aug 2019 – Present  
Mentoring 5 undergraduate CS students to implement, collect and analyze data, and write and publish academic research in a variety of projects spanning VR/AR, cognitive science, and human-AI/ML interaction

**UIUC CS Graduate Ambassador** 2016 – 2018  
Helped UIUC CS Graduate Admissions to organize and moderate panels for incoming CS graduate students

## SELECTED AWARDS AND HONORS

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**Apple Scholars in AI/ML University Nomination** 2020  
Nominated by the Graduate College to represent UIUC at Apple's fellowship competition

**U.S. Army CCDC Army Research Laboratory Journeyman Fellowship** 2019  
Prestigious fellowship to conduct dissertation research in collaboration with ARL

**UIUC Certificate of Recognition for Academic Excellence** 2018  
UIUC award for excellence in research, teaching, or service

**Illinois Sloan Scholar, Alfred P. Sloan Foundation's Minority Ph.D. Program** 2016  
Merit-based award for incoming minority Ph.D. students