Sebastian S. Rodriguez, Ph.D.

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EDUCATION

University of Illinois at Urbana-Champaign Urbana, IL | August 2016 – August 2022
Doctor of Philosophy (Ph.D.) in Computer Science

Northwestern University Evanston, IL | September 2012 – June 2016
Bachelor of Science (B.S.) in Computer Engineering

EXPERIENCE

Meta – Analytics Engineer Menlo Park, CA | August 2022 – Present

- Building internal management tools in **PHP** to facilitate responsible data management practices, eliminating a total of 15 years of GDPR non-compliant internal assets.
- Developing scalable pipelines and **CI/CD** workflows in **Python** to analyze petabytes of privacy data for modeling and reporting. This informs 20,000 employees and drives decision-making to support Meta's privacy practices.

Computer Science at Illinois – Graduate Researcher Urbana, IL | August 2016 – August 2022

- Led a team of 8 research engineers to develop a wildlife sandbox simulation in **Unity/C#**, guiding and reviewing implementation of simulation logic, interface design, networking, rendering, and **CI/CD**.
- Designed and published a multi-platform online **VR** experience using **Unity/C#**, **AWS Lambda, Python,** and **DynamoDB** to research human trust towards robots, played by ~100 participants.
- Developed *RemoteLab* (with Microsoft Research), an open-sourced **Unity/C#** library facilitating remote **XR** user studies, leveraging packet compression and event-based logs to reduce transfer overhead by 57%.
- Mentored over 10 students on engineering and career topics, who have since progressed to coveted doctoral programs or industry positions.

Meta – Quantitative UX Researcher Intern Menlo Park, CA | June 2021 – August 2021

- Developed analysis pipelines in **Python** and **Presto**, wrangling data and conducting summary analyses. Built user models from ~15,000 key users to inform the roadmapping of 2 new Messenger features.
- Collaborated on an award-winning **XR** multiplayer experience in **Unity/C#** for an internal hackathon among ~50 submissions, supporting the development of the Quest platform's co-location API for developers.

U.S. Army Research Laboratory – Research Fellow Aberdeen, MD | August 2018 – December 2020

- Led development of an interactive simulation in **Unity/C#**, validating reinforcement learning models. This was part of a 10-million-dollar effort to research soldier-agent systems, leading to 6 publications.
- Devised inter-process communication between the **C#** simulation and TensorFlow instances in **Python**, driving AI behavior and reducing model training iterations by 50x.

U.S. Army Research Laboratory – Research Engineer Intern Playa Vista, CA | May 2018 – August 2018

- Authored an interactive strategy game in **Unity/C#** to research human adherence to AI recommendations, launched and played online by ~1,000 participants.
- Built analytics pipelines and structural equation models in **Python** and **R** to analyze ~50,000 points of behavioral game data, leading to an award-winning publication.

SKILLS

Programming	C#, C++, Python, R, JavaScript, TypeScript, PHP, Hack, C, Java, SQL
Frameworks	Unity, Oculus XR, Selenium, Flask, pandas/NumPy, Jupyter, React, Node.js, Arduino, Processing, Hive, Spark, Presto, git, Mercurial, CI/CD, GitHub Actions, Travis CI, GameCI, NUnit, unittest, AWS, REST, BASH/Unix
Research	Machine learning/engineering, inferential/summary statistics, experiment design (traditional/AB), factor analysis, pathway modeling, user modeling, scientific writing, documentation
Languages	English (native), Spanish (native)

Projects and research portfolio found at **sebas.me**