

# 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, conc. in Human-Computer Interaction

### 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 – July 2023

- Built internal tooling in **Hack** to facilitate responsible data management practices, used daily by ~2,000 employees.
- Developed ML workflows in **Python** to process petabytes of privacy data, eliminating 15 years' worth of GDPR non-compliant assets.
- Implemented an automated pipeline in **Python** to aggregate privacy reports, saving ~300,000 yearly work-hours across the company.
- Participated in Agile development processes to deliver critical features for improved privacy practices on a weekly basis.



### Computer Science at Illinois – Lead Software Developer

Urbana, IL | August 2021 – August 2022

- Led and mentored a team of 8 developers to maintain a sandbox game in **Unity** for education; duties included roadmapping features and fixes, implementing game logic, writing unit tests, documentation, reviewing **C#** code, and establishing best practices.
- Guided a major refactoring of the codebase and assets, replacing or removing 65% of outdated or unused components, reducing build sizes by ~90% and increasing user satisfaction with load times by 48%.
- Enabled automation tools with **GitHub Actions** and **GameCI**, reducing build times by ~37% and preventing 95% of production bugs.



### Computer Science at Illinois – Graduate Researcher

Urbana, IL | August 2016 – August 2022

- Created a multi-platform **VR** experience in **Unity/C#** for research, released in Prolific and rated "highly engaging" by ~200 participants.
- Prototyped 2 novel voice-AR interactions using **Unity/C#**, HoloLens 2, **Vuforia**, and LLMs, with demos at CS academic conferences.
- Collaborated with Microsoft to develop a free **Unity** package that enables researchers and participants affected by COVID-19 to run remote **VR/AR** user studies using Photon. Published in a highly regarded CS academic conference.
- Mentored over 10 students on engineering and career topics, progressing to coveted doctoral programs or industry positions.



### U.S. Army Research Laboratory – Research Fellow

Aberdeen, MD | August 2018 – December 2020

- Designed 2 cooperative games in **Unity/C#** and launched online in WebGL using **React**, part of a 10-million-dollar grant to research soldier-agent autonomous systems. Played online by ~600 participants.
- Programmed game logic, RL pipelines, survey user interfaces, automated tooling, browser/WebGL interfacing, and API integrations.
- Built a backend using **Python**, **AWS Lambda**, **API Gateway**, and **DynamoDB** to store trained RL models and results from ~12,000 completed games.
- Optimized IPC between **Unity** and **Python** TensorFlow runtimes, reducing model training iterations from ~50 hours to 5 minutes.



### U.S. Army Research Laboratory – Software Engineer Intern

Playa Vista, CA | May 2018 – August 2018

- Designed 3 strategy games in **Unity/C#** for research, published using **React** and played online by ~1,000 participants.
- Implemented client networking using **UNet** and **WebSockets**, supporting lobbies and concurrent gameplay for up to 4 participants.
- Developed a REST API with **Python**, **AWS Lambda**, **API Gateway**, and **DocumentDB** to store ~50,000 results from completed games.

## SKILLS

Programming	C#, C++, Python, JavaScript, PHP, Hack, C, Java, SQL
Frameworks	Unity, .NET, Oculus XR, Visual Studio, WPF, Photon, Selenium, Flask, React, Node.js, Arduino, Processing, git, Mercurial, CI/CD, GitHub Actions, Travis CI, GameCI, NUnit, unittest, Hive, Spark, Presto, 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)

Portfolio found at [sebas.me](https://sebas.me)