Robert David Hernandez

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Technical Skills

Linux, Azure, Python, C#, Docker, Kubernentes, OpenTelemetry, Applied AI, Distributed Systems, Java, Typescript, SQL, Golang, C, CloudEvents, DevOps & DevSecOps, MLOps, Secure Software Supply Chain, Machine Learning, Automated Testing, System Design

Experience

University of Illinois — **Chicago, IL**

Software Engineer & Graduate Research Scholar — *Jan 2025 –Present*

- Led development of AutoPatch a novel system for LLM Based Low Level Memory Safety Bug Patching in C with Fuzzing, Address Sanitization, and Code Property Graphs; Related Work: Github CoPilot Autofix, Microsoft InferFix
- Research Funding: **Google** Institutional Research Program & National Science Foundation. In collaboration with Texas A&M

Microsoft — **Redmond, WA**

Software Engineer, Industry Solutions Engineering — *Jun 2022 – Dec 2024*

- Designed a scalable observability stack surfacing dozens of key metrics delivering Distributed Logs, Metrics, and Traces compatible with OpenTelemetry for a customer's platform layer in Kubernetes (k8s), and React UI
- 83.18% (+274.5TB) space saving of Edge AI GPU-based models across deployment sites for a single customer project
- Developed an award-winning MLOps activity during an executive hackathon, showcasing Fabric vs. Databricks from ingestion to model deployment on AzureML
- Prevented millions in capital losses achieving Zero CVEs in a customer's stack by building container image scanning across +dozen repositories and driving team alignment, resulting in remediation for +70 vulnerabilities (incl. critical and high)
- Received written recognition from a customer's lead architect after delivering core serverless functions and event driven design a Hollywood firm's most profitable studio resulting in significant business impact on a core film production workflow
- Grew junior engineers by encouraging skill development in engineering fundamentals, fostering a growth-oriented culture
- Delivered: anomaly detection, prompt engineering, architecture, IaC, data models, documentation, tests, frontend features, etc.

JPMorgan Chase & Co. — **Chicago, IL**

Senior Software Engineer, Corporate & Investment Bank — *Apr 2019 – June 2022*

- Designed and implemented event-driven microservices processing +$810B/year in financial transactions using Java
- Impacted Optical Character Recognition AI/ML systems moving insights to production by collaborating with Data Scientists
- Delighted +$100MM AUM Clients by driving product modernization from legacy stack to greenfield

Intel Corporation — **Santa Clara, CA**

Product Development Engineer, Data Center Group — *Jun 2018 – Apr 2019*

- +200% reduction in workflow time for 50+ electrical engineers through Unix tool development in Python

UEFI / BIOS & Firmware Engineering Intern, Data Center Group — *Jan 2017 – Aug 2017*

- Developed C/C++ Firmware in Post-DXE environment; set up CI infrastructure from bare metal

Echo Global Logistics — **Chicago, IL**

Software Development Intern — *Summer 2016*

- Implemented feature in C# that grew bottom line by +$30k annually that automated a tax write-off process

Harvard University, School of Engineering and Applied Sciences — **Cambridge, MA**

Visiting Research Fellow, *George M. Whitesides' Group* — *Summer 2014*

- 3.2x resolution and 2.5x throughput gain of nanofabrication of metamaterials; Presented findings at Harvard SEAS symposium
- Drove electron beam evaporation, photolithography, wet chemical etching, scanning electron microscopy

Education

University of Illinois at Chicago — **Chicago, IL**

Master of Science in Computer Science — *May 2025*

Loyola University Chicago — **Chicago, IL**

Bachelor of Science in Software Engineering — *May 2018*

Leadership & Awards

- **Google** Research Funding 2025; Microsoft Hackathon Winner 2024; JPMorgan Hackathon Podium 2019
- Chair, ACM Chicago Professional Chapter 2016-2018; Mentor, Code Platoon 2019-2021; CODE2040 Fellow 2017