Edgar Reyes-Rivera

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Education

Miami University | GPA: 3.48 — Oxford, OH
Bachelor of Science in Computer Engineering — *Expected May 2027*
Bachelor of Science in Computer Science — *Expected May 2027*

Relevant Coursework: High Performance Computing & Parallel Programming, Algorithms I, Data Abstractions & Structures, Object-Oriented Programming, Systems I & II, Database Systems, Comparative Programming Languages, Computer Organization

Skills & Certifications

Languages: C++, C, C#, Python, Java, JavaScript, TypeScript, SQL, CUDA, OCaml, HTML/CSS, SystemVerilog, Verilog, MIPS Assembly

Frameworks & Web: .NET, NHibernate, Vue.js, PrimeVue, React, Firebase, Astro, Tailwind CSS, PyTorch

Systems & Infrastructure: Linux, HPC (Slurm), Multi-threading, Virtualization (Proxmox), TrueNAS, Docker, Tailscale, Git, GitHub

Tools & Practices: Microsoft SQL Server (SSMS), Salesforce, JIRA, Bitbucket, Confluence, Studio 5000, FactoryTalk View, MATLAB, Agile

Certifications: OASiS Rapid Certification in Semiconductor Manufacturing (University of Cincinnati), including hands-on cleanroom wafer etching

Experience

RoviSys — Aurora, OH
Software Co-op — *May 2026 – Aug 2026*

- Programmed control modules, ladder logic, and interlocks in Studio 5000 for a new production mix tank that runs the same or different recipes in parallel with the plant's existing tank, increasing total output.
- Configured FactoryTalk View HMI screens for plant operators and ramped up quickly when pulled onto other in-flight site projects.
- Built full-stack features for a client's semiconductor-manufacturing management web app, migrated from Visual Basic, that tracks process interruptions, active runs, tolerances, and material measurements.
- Developed across dozens of pages alongside the client's engineers: C# and .NET with NHibernate on Microsoft SQL Server, Vue.js, TypeScript, PrimeVue, role-based page permissions, and Docker.

Synchrony — Cincinnati, OH
Software Engineer Intern — *Jul 2024 – Sep 2024*

- Prototyped a pipeline that turns website visitors into Salesforce sales leads via opt-in mobile phone capture and email engagement tracking.
- Researched, prototyped, and presented solutions for internal teams on an agile Enablement Architecture team (Java, JavaScript, React, SQL), iterating on stakeholder feedback before handing findings to the owning teams.
- Tracked work and collaborated on code with JIRA, Bitbucket, and Confluence in agile sprints.

Projects

Trading Strategy Research System | *Jul 2026* — reyesrivera.com/projects/trading-research

- Built a Python trading-strategy research system: a SQLite pipeline of daily bars for 25 tickers since 2010, a backtest engine, and a 66-test suite.
- Engineered the backtester for trustworthy results using next-bar-open fills, slippage modeling, and an anti-lookahead assertion harness that re-runs strategies on truncated history to prove no future data leaks.
- Optimized the research loop so a full 75-combination strategy sweep completes in about 15 seconds; runs live against the Alpaca paper-trading API since July 2026.

3D Gaussian Splatting for Radar Imaging *(In Progress)* — reyesrivera.com/projects/radar-gaussian-splatting

- Extending 3D Gaussian Splatting to radar imaging for senior design, reporting findings to Air Force Research Laboratory (AFRL) researchers.
- Evaluating eight radar and splatting codebases on a Slurm-managed Tesla V100 cluster, compiling C++ and CUDA with a pinned CentOS toolchain.
- Building synthetic 3D ground truth: multi-material scenes rendered at known camera poses, to validate with optical 3DGS before radar modeling.

CIFAR-10 CNN Design and Ablation Study | *May 2026* — reyesrivera.com/projects/cifar10-cnn

- Designed a 10-layer VGG-style convolutional network (1.24M parameters, BatchNorm and GELU, global average pooling) in Python with PyTorch, reaching 92.21% test accuracy on CIFAR-10 versus a 75.53% course baseline.
- Co-developed with a course partner; justified every design choice with 12 controlled single-variable ablation experiments, where removing BatchNorm cost the most accuracy (6.1 points).

Self-Hosted Homelab Server | *Ongoing*

- Run a TrueNAS Scale server hosting containerized Nextcloud, Pi-hole, Vikunja (daily coursework task board), and CouchDB for Obsidian sync.
- Expose services securely through Tailscale and a Cloudflare Tunnel behind Nginx Proxy Manager, routed through a personal domain.
- Previously ran Proxmox VE on a converted desktop, hosting multiple virtual machines across different operating systems.

Leadership & Service

President, Society of Hispanic Professional Engineers (SHPE) — *Aug 2025 – May 2026*

- Led a 25-member chapter and its weekly events; served as liaison to National SHPE and the College of Engineering and Computing.
- Managed six corporate sponsor relationships funding member events, including Avery Dennison's recurring $1,000-per-semester sponsorship.