

Worked on a supervised five-person capstone team building a WinForms interface for simulated market activity. Contributed application structure, event handling, testing, source control, and user-focused revisions that made demonstrations easier to follow under volatile scenarios.

- Designed a **WinForms** application for monitoring simulated equities, order tickets, and risk-limit alerts during volatile test scenarios.
- Implemented **C#** classes for quote normalization, command handling, and validation with encapsulation, interfaces, and **dependency injection**.
- Created a responsive update queue that separated market-feed events from interface rendering during replay of 12,000 events.
- Authored NUnit and end-to-end tests for invalid orders, disconnected feeds, duplicate messages, and boundary values, catching failure paths early.
- Managed Git history through issue-linked commits, code reviews, and release tags that supported milestone grading and final evaluation.
- Presented the application to a faculty panel, then converted feedback into keyboard shortcuts, clearer error messages, and a consolidated activity view.

C# .NET Application Development Student

Northwestern University Student Lab 📅 September 2024 - December 2024 📍 Evanston, IL

Completed supervised desktop application work in an object-oriented design course, with focus on reusable **C# .NET** components, **WPF** interaction patterns, local data handling, and test-driven review. Delivered a documented application while learning how architecture choices affect maintainability and user response.

- Built a C# .NET WPF inventory-monitoring application with reusable components and maintainable **desktop** interaction patterns.
- Modeled domain objects with interfaces, inheritance, and the strategy pattern, supporting multiple alert rules without duplicated logic.
- Connected interface behavior with a local data service and validated incomplete records, malformed inputs, and unavailable data conditions.
- Wrote NUnit tests for core services and evaluated functional behavior across 38 instructor-provided scenarios.
- Maintained Git branches, clear commit messages, and a README covering setup, architecture, and known limitations.
- Presented design tradeoffs and a live demonstration to 24 students, incorporating peer feedback into the final interface and technical report.

PROJECTS

Market Data Workflow Simulator 📅 2025

Built a separate C# desktop simulator that modeled quote updates, order states, and connection events. Focused on readable operator feedback, event sequencing, and testable boundaries so users could review market-style workflows without live trading access.

Desktop Resilience Test Harness 📅 2025

Created a replay-focused test utility for timestamped messages, disconnected feeds, duplicate events, and stale data. Clear failure output helped student developers trace defects and discuss recovery choices during technical reviews.

LEADERSHIP & AWARDS

- Dean's List, Northwestern University - Fall 2025
- Computer Science Department Undergraduate Research Scholarship - 2025
- Capstone Design Showcase, Best User Interface Demonstration - 2025

CERTIFICATIONS

- Microsoft Learn: Build .NET Applications with C# 📅 2026
- Microsoft Learn: WPF Desktop Application Development Fundamentals 📅 2026

PROFESSIONAL AFFILIATIONS

- Student Lead, Northwestern Software Design Study Group - 2025 - Present
- Member, Association for Computing Machinery Student Chapter - 2024 - Present

LANGUAGES

- English (Native)
- Spanish (Proficient)

ADDITIONAL INFORMATION

Work Status : Authorized to work in United States. No sponsorship required.

REFERENCES

AVAILABLE ON REQUEST