Altored Health

NAU Venture Studio

Capstone Proposal: Building Transparent Healthcare Pricing with AI

If you aren't steering your healthcare, someone else is.

***This project is undertaken in collaboration with the NAU Venture Studio. The partnership requires adherence to structured deliverables within specified timelines, as well as the fulfillment of additional outlined time requirements. Please see the details below.**

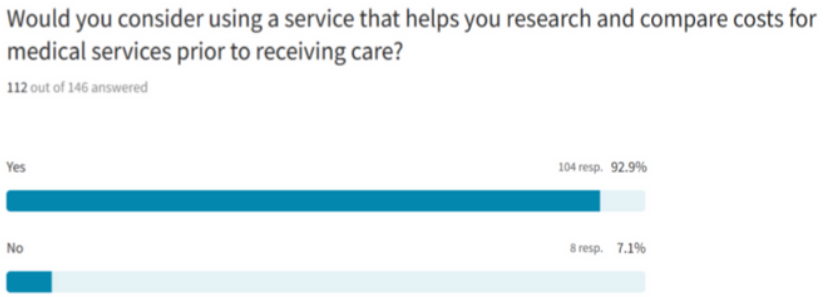
Problem Statement

Sixty-seven percent of U.S. personal bankruptcies stem from medical bills, yet patients still lack access to clear, personalized pricing. With 90% of consumers demanding real-time cost visibility, the gap between what people need and what the system delivers is staggering. Patients are billed without context, comparison, or recourse—leaving them disempowered in one of the most critical decisions they'll ever make.

You won't be prototyping. You'll be deploying infrastructure and a usable MVP that reshapes how pricing is understood, challenged, and trusted. This project invites students to build the infrastructure for transparent, patient-facing pricing that empowers users to understand, compare, and challenge healthcare costs using real-time data and AI.

Project Description

Students will architect and prototype a modular pricing intelligence platform for Altored Health. The system will ingest procedure-level pricing data, apply logic and AI to surface insights, and deliver a clean, mobile-first user experience.



Key features include:

· Real-time pricing logic with explainable outputs
· Patient-facing UI/UX optimized for clarity and action
· Modular backend architecture with scalable APIs
· Integration with Snowflake or comparable cloud data warehouse
· Evaluation of agentic AI tools for pricing prediction and user support
· HIPAA-aware design and compliance planning

This is not a simulation. Students will build within a live startup context, with real deliverables, founder-level mentorship, and the opportunity to engineer massive change.

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Additional Time Requirements with NAU Venture Studio

Students will also be required to work with the **NAU Venture Studio** and attend specific workshops throughout their work on this project.

***Please note that the following events and corresponding deadlines are in addition to your capstone syllabus and will be required. Full team participation is expected.**

- **30-Hour Hack-A-Thon (Sept 5th–7th)**: Chance to rapidly advance the project within 30 hours.
- **NSF I-Corps Aspire** (**Sept 11, 18, 25 & Oct 2**): During these 4 Thursdays, from 5PM-8PM, in Cline Library, we will deep dive into customer features and industry mentoring.
- **Lean Startup Weekend – MVP Build (Oct 3th–5th)**: A weekend for building a Minimal-Viable Product – including a pitch in front of judges and feedback.
- **Lean Startup Weekend – Pitch Prep (Oct 24th–26th)**: Sharpen the pitch, refine the MVP, and practice delivering a compelling presentation.
- **Demo Day (TBD, Homecoming Week)**: Present the MVP to community leaders, investors, and peers while celebrating our progress.

Benefits for Students

· **Build a Real-World MVP**: Architect and deploy a live healthcare pricing product with real users, real data, and real impact—no sandbox, no simulation.
· **Own the Full Stack**: Design secure backend APIs, mobile-first UIs, and intelligent pricing logic using modern frameworks and cloud infrastructure.
· **Apply AI and Cybersecurity in Context**: Integrate agentic tools, predictive logic, and HIPAA-grade authentication—then explain your decisions to legal, product, and executive stakeholders.
· **Master Startup Literacy**: Scope MVPs, prioritize speed, and iterate based on real feedback from I-Corps, Lean Startup Week, and target users.
· **Operate Across Domains**: Collaborate with legal specialists, C-suite executives, product strategists, and technical mentors to shape a human-centered solution and translate your technical decisions into strategic insights.
· **Launch with Leverage**: Graduate with portfolio-ready code, strategic documentation, and a founder-grade roadmap—plus potential roles on the Altored Health team.

Knowledge & Skills Required

This project is designed for senior CS students with strong technical foundations and startup curiosity.
· **Technical Skills**: React, Express.js, Python, SQL, Snowflake, REST APIs
· **AI/ML**: Experience with supervised learning, explainability, and agentic tools
· **Data Analysis**: Ability to clean, structure, and interpret healthcare datasets
· **Software & Data Architecture**: Modular backend design and scalable deployment
· **Compliance Awareness**: Understanding of HIPAA and secure data handling
· **Product Thinking**: Translate backend logic into intuitive user experiences

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Project Requirements

- System and Data Architecture
- Product/application (web app, APIs, user roles)
- Data platform (ingest → validate → transform → warehouse)
- ML/LLM (optional: model serving, prompt governance, redaction)
- Security/compliance (policies, controls, audits, BAAs)
- DevOps/SRE (CI/CD, IaC, monitoring, backups, DR)
- Build the Core MVP
- Architect a modular backend API for real-time pricing logic
- Warehouse integration connecting to validated data layer, ensuring accuracy, traceability and scalable analytics.
- Build a mobile-first frontend with clear, intuitive UI that surfaces pricing insights clearly
- Layer Intelligence and Trust
- Evaluate and integrate agentic AI tools for prediction or support
- Define validation logic for pricing accuracy and explainability
- Design with HIPAA compliance and future scalability in mind
- Implement authentication and secure data handling aligned with HIPAA and OWASP guidelines
- Test, Deploy, and Iterate
- Conduct lightweight user testing to validate clarity, trust, and usability
- Deploy the MVP to a secure, scalable cloud environment (e.g., Vercel, AWS, Azure)
- Attend **I-Corps** and the **NAU Venture Studio *Lean Startup Semester Series*** to gain firsthand experience in customer discovery, market validation, and iterative product strategy
- Documentation & Communication
- Document system architecture, logic, compliance considerations, and handoff instructions
- Communicate technical decisions clearly to non-technical stakeholders
- Manage tasks, timelines, and collaboration using milestone-based planning and cross-functional coordination

Tools You'll Likely Use

Expect to work with tools such as **React** for dynamic UI, **Express.js** with **Python** services for backend logic, and cloud-native databases like **AWS, Azure,** or **Snowflake** optimized for big data and analytics. You'll also create **NLP** models for classifying medical data and determine cloud providers (AWS, GCP, Azure) for CI/CD, scalability, and HIPAA-grade security.

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Deliverables

- **Working MVP & Full Stack Architecture** with real-time pricing logic and patient-facing UI.
- **Demo Walkthrough & Presentations** showcasing system architecture and user impact.
- **Stakeholder-Ready Presentation** for technical and non-technical audiences.
- **Documentation** on backend logic, architecture, compliance, etc.
- **Final Strategic Report** with design decisions, usability insights, and strategic learnings from **I-Corps** and the **NAU Venture Studio** *Lean Semester Startup Series*
- **Roadmap & Technical Strategy** briefing with next milestones for product evolution, technical refinement, and user validation.
- **Integration Opportunities** with provider APIs, payer data, or compliance platforms.
- **Protective Guardrails** to preserve leverage, mitigate risk, and anticipate scale.
- **Technical Team & Talent Needs** for future phases.

Further Questions

If you have any further questions about this project, please contact:

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