

E-ZPass Fraud Detection System - Final Presentation Template

New Jersey Courts - NJIT Capstone Project

Target Score: 150/150 (Excellent)



15-Slide Structure (18 minutes max)

Slide 1: Title + Problem Hook

- Project title + NJ Courts branding
- The challenge (manual review, limited detection)
- Our impact (stats: alerts found, money saved)
- Team names + logos

Slide 2: Problem Deep Dive

- Current state (40% detection rate, manual CSV review)
- 3 fraud types (toll evasion, card skimming, account takeover)
- Business impact (revenue loss, investigation backlog)
- Data source (3,213 March 2025 transactions analyzed)

Slide 3: Solution Architecture

- Vision statement ("reactive to proactive using AI")
- Flow diagram (CSV → Risk Algorithm → Dashboard)
- Tech stack (React, Chart.js, Node.js, Azure)
- Key features (real-time, 12 rules, 0-100 scoring)

Slide 4: AI Risk Algorithm

- Risk score formula (amount 30%, frequency 25%, etc.)
- Key detection rules (>\$100 amounts, impossible travel, off-hours)
- Classification thresholds (0-30 clean, 71-100 high risk)
- Agency-specific logic (PANYNJ, NJTP, GSP, SJ, DRJTBC)

Slide 5: Dashboard Design

- Dashboard view (3 KPI cards, charts, recent alerts)
- Data table (10 columns, status dropdowns, search/filter)
- Design principles (teal branding, dark theme, accessibility)
- Screenshots comparison

Slide 6: [LIVE DEMO - Dashboard]

- Screen share application
- Show statistics (1,428 alerts, \$76,330 prevented)
- Navigate recent alerts → data table
- Highlight processing speed (<5 sec), accuracy (92%)

Slide 7: [LIVE DEMO - Workflow]

- Filter by status, search transactions
- Change status (Flagged → Investigating → Resolved)
- Show color changes (amber → red → green)
- Demonstrate no scrolling, mobile-friendly

Slide 8: Business Impact & ROI

- Performance metrics table (92% detection, 3.2 sec processing)
- Time savings (15hrs → 4hrs/week, 73% reduction)
- Cost analysis
- Business benefits (proactive, data-driven, audit trail)

Slide 9: Technical Implementation

- Scalability (20K current → 500K+ capacity)
- Security (HTTPS, data retention, accessibility)
- Development (8 sprints, 50+ commits, agile)
- Quality (98.5% parsing success, zero corruption)

Slide 10: Innovation Highlights

- **Technical innovations:** Real-time scoring, agency-specific rules
- **Business innovations:** Cost-effective, rapid deployment, zero training
- **Competitive advantage:** First NJ-specific platform
- **AI integration ready:** Azure OpenAI framework

Slide 11: Validation & Testing

- Real data (3,213 transactions, 92% accuracy)
- User experience (intuitive, mobile, color-coded)
- Performance testing (large files, browser compatibility)
- User feedback quotes

Slide 12: Future Roadmap

- **Phase 2:** Email integration, Azure OpenAI, user auth
- **Phase 3:** Predictive analytics, mobile app, ML training
- **Strategic vision:** Expand agencies, other courts, licensing

Slide 13: Lessons Learned

- **Technical learnings:** Table layout, React patterns, Chart.js

- **Design learnings:** User feedback, color coding, layouts
- **Project management:** Iterative development, documentation
- **Personal growth:** Domain expertise, client skills

Slide 14: Next Steps & Recommendations

- **Immediate actions:** Azure deployment, user testing, monitoring
- **Short-term:** Email integration, auth, training materials
- **Strategic recommendations:** Pilot program, ROI measurement
- Team availability for full-time roles

Slide 15: Thank You & Q&A

- Project summary (5 key achievements with checkmarks)
- Team achievements (2 months, agile, real-world testing)
- Thank you section
- Employment interest + contact info
- Questions & discussion

Timing & Rubric Focus

- **Timing:** 1-1.5 min per slide + 2.5 min each for demos = **18 minutes total**
- **Rubric Focus:**
 - **Problem:** Slides 1-2 (clear, detailed with data)
 - **Sources:** Slide 2 (E-ZPass data) + Slide 15 (acknowledgments)
 - **Solution:** Slides 5-7 (easy to understand + live demo)
 - **Vision:** Slides 3-4, 10 (innovative, elegant)
 - **Implementation:** Slides 8-9 (feasible, well-considered)
 - **Engagement:** Live demos + professional delivery
 - **Organization:** Clear flow, consistent format

Timing Breakdown (15 Slides = 15-18 Minutes)

| Slide | Time | Notes |
|-------|---------|-------------------------------------|
| 1 | 1 min | Quick hook with impact numbers |
| 2 | 2 min | Detailed problem (most important) |
| 3 | 1.5 min | Architecture overview |
| 4 | 2 min | Algorithm details (technical depth) |

| | | |
|-----|---------|--------------------------|
| 5 | 1.5 min | UI design showcase |
| 6 | 2.5 min | Live demo - dashboard |
| 7 | 2.5 min | Live demo - workflow |
| 8 | 2 min | Business impact & ROI |
| 9 | 1.5 min | Technical implementation |
| 10 | 1 min | Innovation highlights |
| 11 | 1 min | Validation & testing |
| 12 | 1 min | Future roadmap |
| 13 | 1 min | Lessons learned |
| 14 | 1.5 min | Recommendations |
| 15 | 0.5 min | Thank you |
| Q&A | 2-5 min | Remaining time |

**Spring 2024 YWCC Capstone
Final Showcase Presentations – Judging Panel Sheet**

| Problem Identification & Analysis (5 pts) - Clear definition of the problem being solved and methods used to capture the various aspects of the problem being solved | | | | Total Points Earned |
|--|---|--|--|---------------------|
| Unclear; few details 0-1 pt | Partially clear; details missing 2 pt | Mostly clear; detailed 3 pt | Clear; very detailed 4-5 pt | |
| Sources of Information (5pts) - Described references (e.g. books, magazines, websites, reports, and other resources) used, including sponsors and professionals in the field | | | | |
| Did not refer to any sources 0 pt | | Cited relevant sources 5 pt | | |
| Team Solution (60pts) - Prototype delivery, completion with a clear explanation of the solution | | | | |
| Difficult to understand 0-15 pt | Some parts confusing 16-30 pt | Understandable 31-45 pt | Easy to understand by all 46-60 pt | |
| Vision (30pts) - Degree to which the team's proposed solution answers their problem, whether through an elegant and robust solution as specified by stakeholders, or through creative/innovative means | | | | |
| Inelegant solution / does not answer problem 0-7 pt | Somewhat elegant/robust existing solution OR somewhat creative/innovative new solution 8-15 pt | Fairly elegant/robust existing solution OR fairly creative/innovative new solution 16-23 pt | Highly elegant/robust existing solution OR highly creative/innovative new solution 24-30 pt | |
| Implementation (40pts) - Consideration of factors for implementation (user-friendliness, how easy is it to integrate, cost, ease of manufacturing, how future users interact with the product, etc., and for industry projects only, sponsor requests if applicable) | | | | |
| Minimal factors considered 0-10 pt | Some factors considered 11-20 pt | Factors well considered; some question about the proposed solution 21-30 pt | Factors well-considered and feasible solution proposed 31-40 pt | |
| Presentation Engagement (30pts) - Engagement and delivery of the presentation, in addition to professional appearance | | | | |
| unprofessional presentation; minimal engagement 0-7 pt | professional presentation OR engaging / enthusiasm 8-15 pt | professional presentation AND engaging / enthusiasm 16-23 pt | very professional AND exceptionally engaging / enthusiastic 24-30 pt | |
| Presentation Organization (30pts) - Content and organization of the presentation | | | | |
| unclear OR disorganized 0-7 pt | partially clear; minimal organization 8-15 pt | mostly clear; mostly organized 16-23 pt | clear AND well-organized 24-30 pt | |