**AI-Assisted Web Privacy QA Tool for Cookie and Tracking Diagnostics**
**CS@Mines Field Session / Capstone Project Proposal**
**Sponsor: Ankura**

# Company Background

Ankura is a global expert services and advisory firm that helps clients address complex business, risk, compliance, technology, cybersecurity, and data privacy challenges. Ankura's professionals support organizations across industries with advisory, investigative, technical, and operational services.

Within Ankura's privacy and technology work, teams frequently assess websites and digital properties for issues involving cookies, consent banners, tracking technologies, tag behavior, and privacy-related implementation defects. This work often requires consultants to review browser activity, network requests, application behavior, cookies, and consent-related logic to identify implementation gaps, privacy risks, and quality assurance issues.

# Problem Statement

Website privacy and cookie diagnostics are often highly manual. Consultants and analysts typically inspect browser developer tools, application behavior, network traffic, cookies, consent signals, and page elements independently, then attempt to synthesize those observations into a coherent diagnosis of what is happening on a webpage. This process can be time-consuming, repetitive, and difficult to scale, especially when the reviewer must manually translate their observations into text prompts or notes for further analysis.

The objective of this project is to design and build a prototype **AI-integrated Chrome extension or lightweight application** that helps a reviewer analyze the network and application context of a webpage in a more holistic way. Rather than relying only on manual review or fragmented text input, the prototype should gather relevant browser- and page-level information and use AI-assisted logic to help identify potential cookie, consent, tracking, and implementation issues.

The prototype should support a human reviewer by surfacing observations, organizing technical context, and highlighting possible vulnerabilities, oversights, or QA concerns. It is not intended to make final legal or compliance determinations autonomously. Instead, it should function as an intelligent analyst support tool for privacy and digital-governance review workflows.

# Description of Work to Be Done

The student team will design and prototype a tool that can assist with website privacy diagnostics by capturing and analyzing relevant webpage context. Depending on feasibility and team design choices, the deliverable may take the form of a Chrome extension, a local application, or a hybrid architecture.

Possible project functions include:

- capturing or summarizing relevant browser context from a webpage session
- reviewing cookie and storage behavior
- analyzing network requests and related metadata
- identifying signals related to consent or tracking implementation
- correlating page behavior with observed technical artifacts
- organizing findings into a reviewer-friendly summary
- surfacing likely issues, inconsistencies, or follow-up questions for QA review

The prototype should demonstrate how AI can assist with technical privacy QA by helping a reviewer interpret the webpage environment more holistically than a manual text-only workflow.

Illustrative issue types may include:

- cookies or trackers appearing unexpectedly
- technologies not behaving consistently with apparent consent state
- category/wrapping inconsistencies
- potential implementation oversights
- confusing or incomplete banner/preference-center behavior
- unexplained network activity relevant to privacy review

The exact scope should remain appropriately bounded for a 5-week full-time student effort. The project is expected to result in a working prototype, not a production-ready enterprise tool.

# Recommended Skills

- JavaScript and/or TypeScript
- Chrome extension development
- Python or other scripting languages
- basic web technologies (HTML, CSS, DOM, browser storage, HTTP requests)
- familiarity with browser developer tools
- API integration
- basic AI/LLM application development
- UI/UX design for technical tools
- structured data handling and summarization logic

# Project Requirements

- Preferred team size: **3–5 students**
- The project should be treated as an academic collaboration, not as free labor or an internship
- Students should produce a functional prototype suitable for demonstration
- Students may use open-source and commonly available development tools where possible
- If non-standard tools or APIs are needed, Ankura will help provide access or reasonable alternatives

- Students should work primarily with sanitized, synthetic, or non-confidential test data and test environments
- The prototype should include documentation sufficient for demonstration and handoff

# Milestones / Collaboration

Ankura will:

- meet with the students twice per week
- mentor the students throughout the project
- remain flexible with work scheduling so students can attend required campus meetings
- help students learn the domain context and technical problem space
- provide feedback during the course of development
- provide evaluation feedback on the team and individuals through the university survey process
- attend the final presentation if possible

Expected project cadence:

- initial kickoff meeting during the first week
- requirements clarification and workflow discussion
- iterative prototype development
- regular progress check-ins and demos
- final presentation and prototype demonstration

# Available Resources

Ankura expects to provide:

- project mentorship and business/domain guidance
- sample problem scenarios
- sanitized examples of cookie or tracking QA issues
- example output formats and review expectations
- feedback on prioritization and usability
- access to any necessary non-standard tools, if appropriate and feasible for the project

Students may use tools and frameworks commonly available through the university or open-source communities. Depending on final scope, the team may also use:

- Chrome extension tooling
- JavaScript/TypeScript frameworks
- Python-based analysis tools
- AI/LLM APIs or comparable experimentation tools
- local or lightweight demo environments

## Location of Work

Work can be performed remotely, with virtual meetings as needed. Ankura can remain flexible to accommodate students' campus obligations.

## Future Work Opportunity

There may be potential for future internship or role consideration for strong-performing students, but this project should not be viewed as a guaranteed hiring pathway.

## NDA / Confidentiality

If selected, students may be asked to sign a reasonable confidentiality or non-disclosure agreement depending on the final project materials and examples provided. The project will be structured, where possible, to rely on sanitized or non-sensitive materials.

## Intellectual Property

If selected, Ankura may request that intellectual property rights in the resulting work product be assigned to Ankura. Specific terms can be discussed if a team is formed.

## Contact

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