SUPERCHARGING IP WITH AI

Deploying AI While Avoiding the Pitfalls

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STATE OF GEN AI FOR PATENT PROSECUTION

Survey of Generative AI offerings for Patent Prosecution

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"An AI bot assisting a lawyer drafting and prosecuting a patent application." (Meta AI)

April 16, 2024

McDermott Will & Emery

INTRODUCTION + TL;DR

1. Generative AI (“GenAI”) tools for patent prosecution are rapidly evolving – revisit every 6 months
2. *Most* tools not currently acceptable by sophisticated filers
3. Security and privacy of best tools + correct LLMs are acceptable
4. Few tools now ready for market + worth improvement in time efficiency → still require review for accuracy

OVERARCHING CONCERNS

Data Security: ✓

Privacy/Confidentiality: ✓

Accuracy: ✗

Consistency: ✗

Certification of Human Involvement: ⏳

Data, privacy, and security for Azure OpenAI Service

ⓘ Important

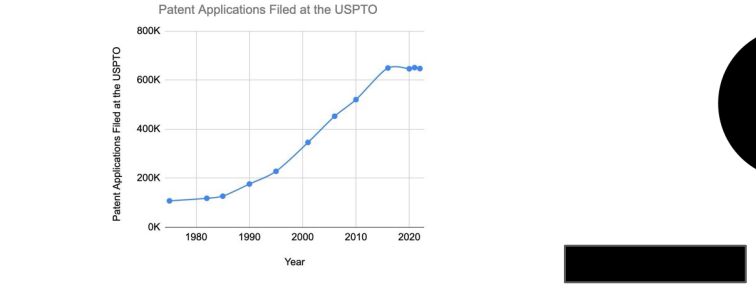
Your prompts (inputs) and completions (outputs), your embeddings, and your training data:

- are NOT available to other customers.
- are NOT available to OpenAI.
- are NOT used to improve OpenAI models.
- are NOT used to improve any Microsoft or 3rd party products or services.
- are NOT used for automatically improving Azure OpenAI models for your use in your resource (The models are stateless, unless you explicitly fine-tune models with your training data).
- Your fine-tuned Azure OpenAI models are available exclusively for your use.

The Azure OpenAI Service is fully controlled by Microsoft; Microsoft hosts the OpenAI models in Microsoft's Azure environment and the Service does NOT interact with any services operated by OpenAI (e.g. ChatGPT, or the OpenAI API).

MICROSOFT.COM/EN-US/LEGAL/COGNITIVE-SERVICES/OPENAI/DATA-PRIVACY

WHY SHOULD WE CONSIDER AI TOOLS?



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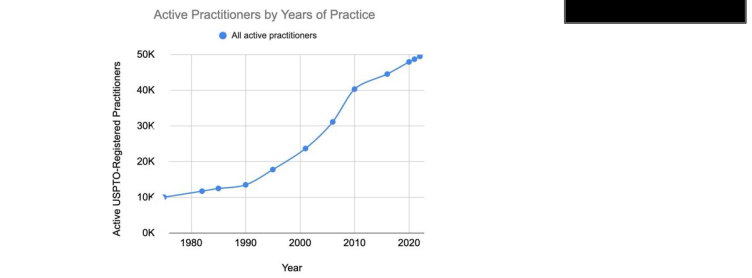

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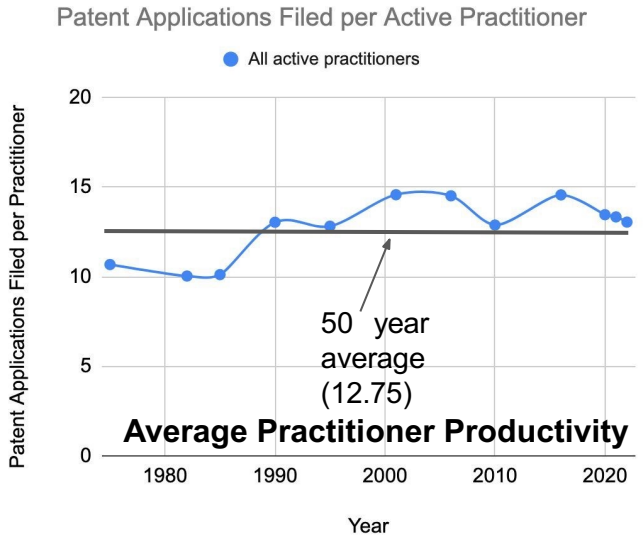

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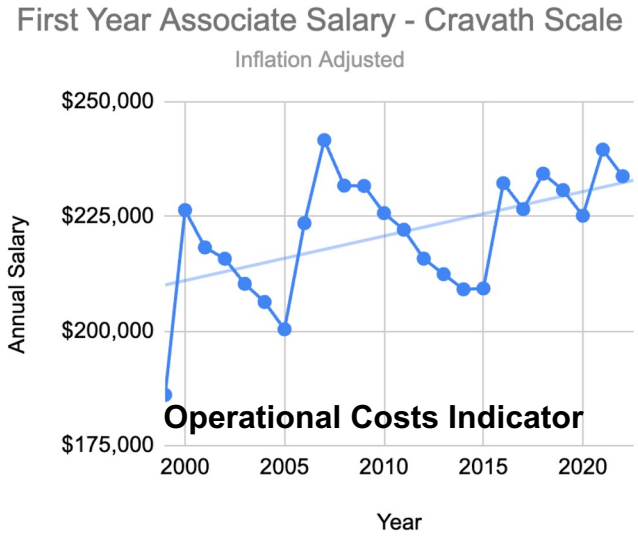

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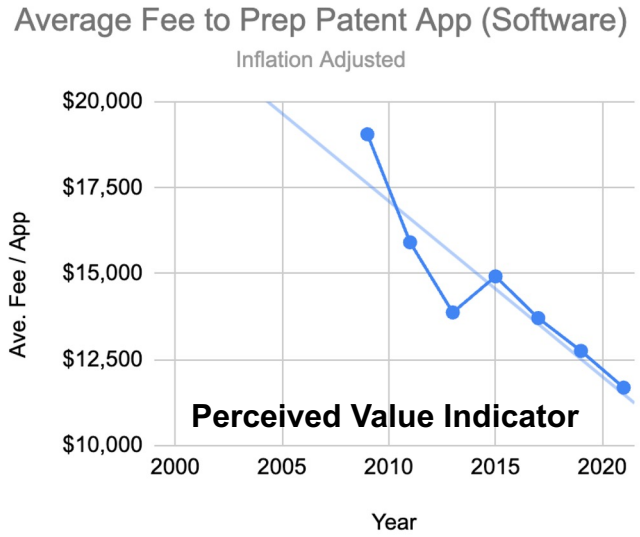


Data + visualizations taken from PAXIMAL

SUSTAINABILITY?

FLAT: (1) Practitioner productivity

+

RISING: (2) Operational costs (e.g., salaries)

+

FALLING: (3) Perceived value (i.e., avg fees)

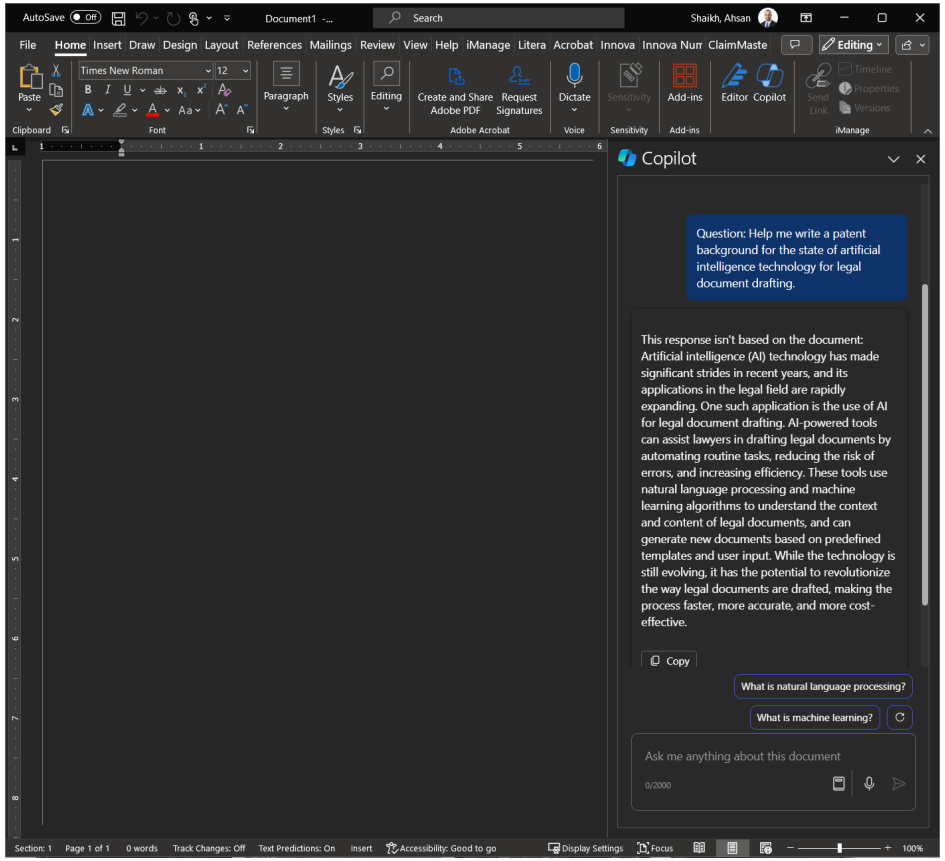
+

SAME: Document requirements

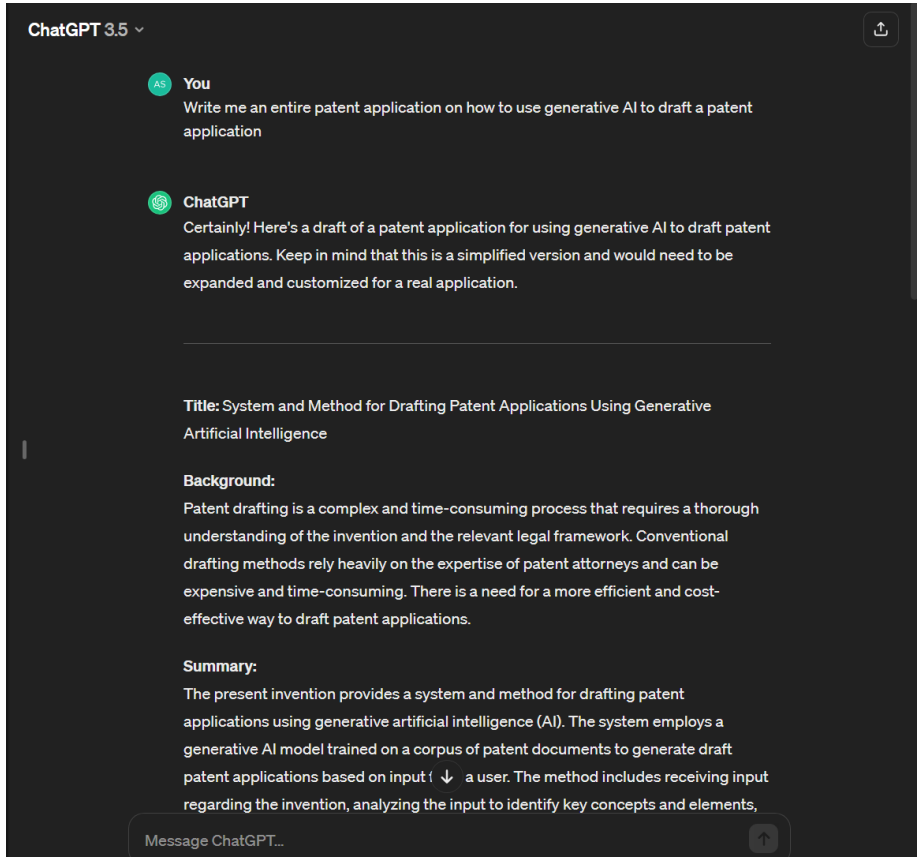
"Draw me an image of a lawyer losing money" (Meta AI)

TWO MAJOR APPROACHES

Selective Enhancement



Entire First Draft Preparation

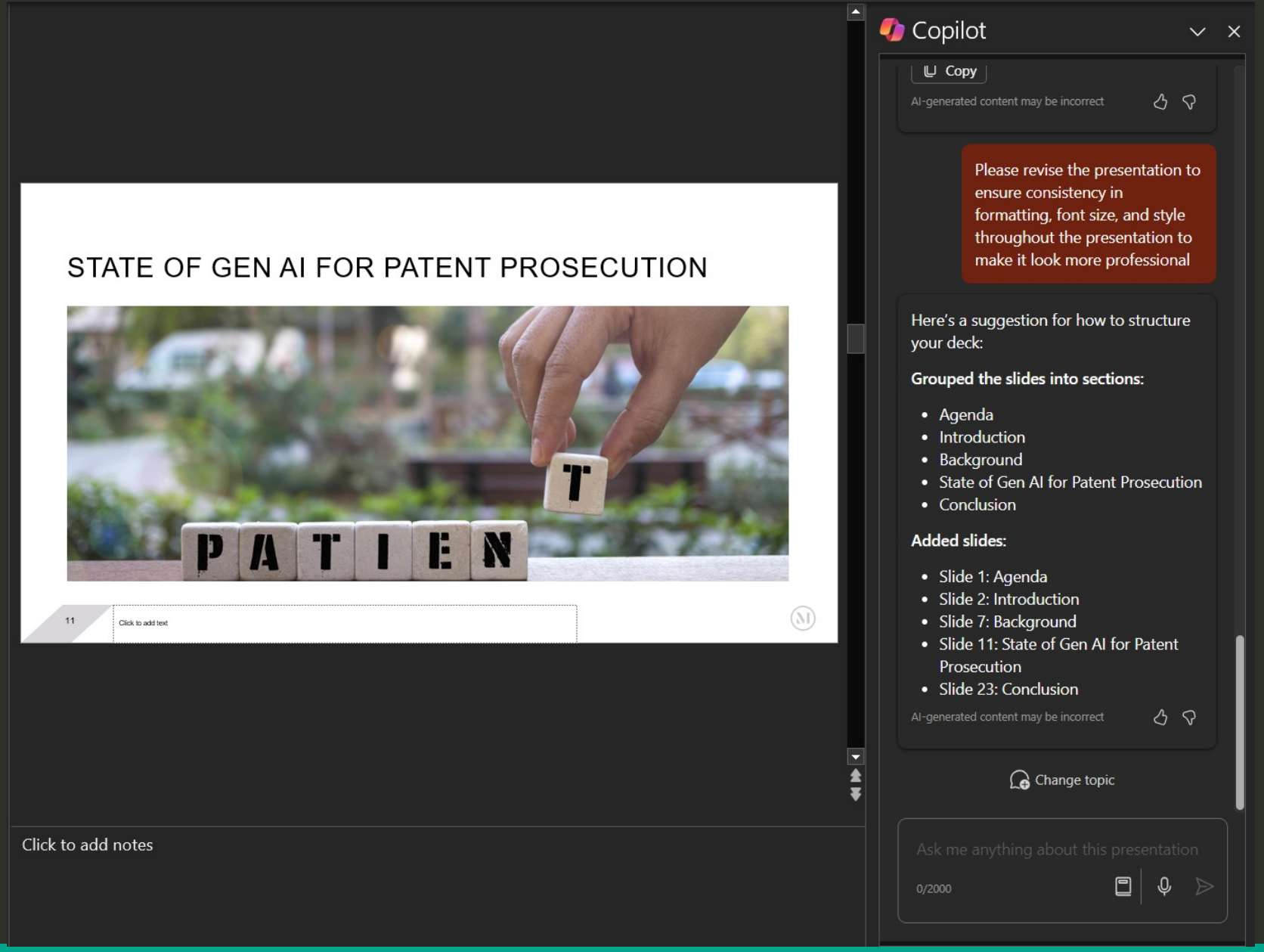


SUMMARY OF THE STATE OF GEN AI FOR PATENT PROSECUTION

Prosecution Stage	Selective Enhancement	Entire First Draft Preparation
0. Discovery	Ready for Use	Not Available
1. Invention Form Intake	Ready for Use	Not Available
2. Prior Art Search	Proceed with Caution*	Not Available
3. Disclosure Meeting	Not Available	Not Available
4. Application Drafting	Ready for Use	Proceed with Caution*
5. Application Filing	Not Available	Not Available
6. Office Action Response	Inefficient	Unreliable
7. Allowance	Unreliable	Not Available
8. Post-Issuance	Unreliable	Not Available

** Requires supervising attorney review results*

STATE OF GEN AI FOR PATENT PROSECUTION



MICROSOFT CO-PILOT FOR OFFICE

DISCOVERY

Selective Enhancement

- **Opportunities**
  - Can search every conversation when humans can't – be in every conversation at once,
    - ensures counsel doesn't miss the "next big thing"
    - This allows in-house counsel to learn about all ideas at once
  - Prior art search done in real time
  - Ingest a corpus of documents at start of a project to identify high value features
- **Concerns**
  - Manage concerns around conversation "monitoring"
  - Total number of ideas can be overwhelming

Full First Draft

- **Opportunities**
  - Does not exist yet
  - Conceiving of an AI agent that collects all ideas, prioritizes them, and provides patenting recommendations, in a single UI
- **Concerns**
  - Larger risks around reliance on hallucinated conclusions/content

72 Trending Ideas

Low-Power Autonomous Tracking Module for Enhanced Device Locatability

Uniqueness: 96 | Medium Value | 0 Experts | 1 Innovators | android, location | View Idea

Discussed 20 hours ago

Snooze Follow

Stealthy String Matching Routine for Compromised System Library Evasion

Uniqueness: 84 | Low Value | 0 Experts | 2 Innovators | ssh, performance | View Idea

Discussed 2 days ago

Snooze Follow

Enhanced Propulsion Efficiency through Pentaborane-Hydrazine Reaction in Combined Rocket/Ramjet Engines

Uniqueness: 98 | Low Value | 0 Experts | 1 Innovators | pentaborane, rocket, propulsion | View Idea

Discussed 20 hours ago

Snooze Follow

Trusted User Limited-Access Device Location System

Innovators: godelski, Teever

Innovation: A system for granting trusted individuals the ability to locate one's device without requiring full account access or compromising security. This system would involve setting up a 'trusted user' status within a device's security settings, allowing designated individuals to request the location of the device through a secure, limited-access interface. The device owner would authorize specific contacts, who could then use a simplified version of the 'Find My Device' feature without triggering 2FA or having access to other account features. This system would require backend verification processes to ensure that only authorized requests are processed, and could include additional safeguards such as time-bound access or one-time-use location requests.

Discussion Thread(s): #1
Experts on Thread(s): GeekyBear, MarkusWandel, spurgu
Followers: None

Uniqueness: 94 | Medium Value | 3 Experts | 2 Innovators | security, find my phone, device | View Idea

Discussed 20 hours ago

Snooze Follow

Digital Archiving and Web Presentation System with Mandatory Access Control for Government Records

Uniqueness: 98 | Low Value | 3 Experts | 1 Innovators | digital archiving, web presentation | View Idea

Discussed 23 hours ago

Snooze Follow

INVENTION INTAKE

Selective Enhancement

- **Opportunities**
  - Coaching contributor on:
    - providing greater detail in submissions
    - further distinguishing from existing art and prior disclosures
  - Integration into inventor chat workflow
- **Concerns**
  - Distinctions between coaching questions and coaching suggestions/inventing

Full First Draft

- **Opportunities**
  - This product does not yet appear to exist
- **Concerns**
  - Inventorship –distinguishing between what was human invented

Problem

Standard ceramic coffee mugs easily shatter when dropped and spill the liquids they contain. This results in potential safety hazards from sharp shards, contributes to the costs associated with replacing mugs and cleaning up, and creates significant inconvenience by interrupting daily routines and potentially ruining nearby objects. The problem extends across various demographics, significantly affecting businesses such as cafes and restaurants that frequently handle large quantities of these mugs, families with children who may be more prone to accidents, and individuals leading busy lifestyles who cannot afford the downtime or risk associated with broken mugs.

IP Copilot

Great job describing the problem and its impact! To help make the disclosure even more comprehensive, I have a suggestion for further elaboration.

Suggestion:

- Can you provide more details on the alternatives to your invention that currently exist? How do people cope with the problem of shattering mugs, and what limitations or challenges do these alternatives present?

Solution

The shatter-resistant ceramic composite material comprises a blend of reinforced ceramics and polymers, including but not limited to silicon carbide (45-55% by weight) and zirconium dioxide (30-40% by weight), which are known for their high toughness and crack resistance. Added to this mix are impact-resistant polymers such as polyethylene (5-15% by weight) to enhance the flexibility of the composite. During the manufacturing process, the ceramic is sintered under high pressure (20-30 MPa) and temperature (1400-1600°C), which enhances its mechanical properties and makes it more resilient to shattering. Additionally, the surface of the ceramic may undergo a vitrification process that involves heating at temperatures ranging from 800 to 1200°C to form a glassy layer, which further increases its strength and resistance to wear.

IP Copilot

Great job on providing a detailed description of the shatter-resistant ceramic composite material!

Suggestion: To further enhance the technical detail of your invention, consider including the following information:

- The specific method of blending the reinforced ceramics and polymers (e.g. mechanical mixing, chemical reaction, etc.)

- The sintering process in more detail, including the equipment used and the duration of the process

- The vitrification process in more detail, including the specific temperature range and duration of heating

PRIOR ART SEARCH

Selective Enhancement

- **Opportunities**
  - Better summarization of potential prior art references
  - Adds value to traditional ML
- **Concerns**
  - Must review each reference carefully

Full First Draft

- **Opportunities**
  - Does not yet exist
- **Concerns**
  - Accuracy of searching and of summaries
  - Invention Disclosure Meeting

AI Analysis

Final Analysis | Prior Art: Potential issues | Rerun AI Analysis

Summary

The disclosure introduces an enhanced night vision feature for VR headsets using an 850hz IR illumination system. This system is unique in its integration into the VR headset, activation in dark settings for clear visibility without breaking immersion, and its design that ensures compatibility with existing display and optics while not adding significant weight or reducing battery life. These features address common issues in current VR technology by providing superhuman night vision capabilities in dark environments, enhancing user experience without compromising the headset's performance.

Unique Features of Disclosure

- Integration of an 850hz IR illumination system into the VR headset

- Activation of the IR illumination system in dark settings to enable clear visibility without breaking immersion

- Design ensures compatibility with existing display and optics without significant weight increase or battery life reduction

Similarities to Prior Art

The prior art and the disclosure both involve the use of IR light in head-mounted displays for enhancing user experience. They focus on integrating IR systems to improve visibility in low-light conditions, tracking, and depth sensing, without significantly impacting the headset's form factor, weight, or power consumption.

APPLICATION DRAFTING

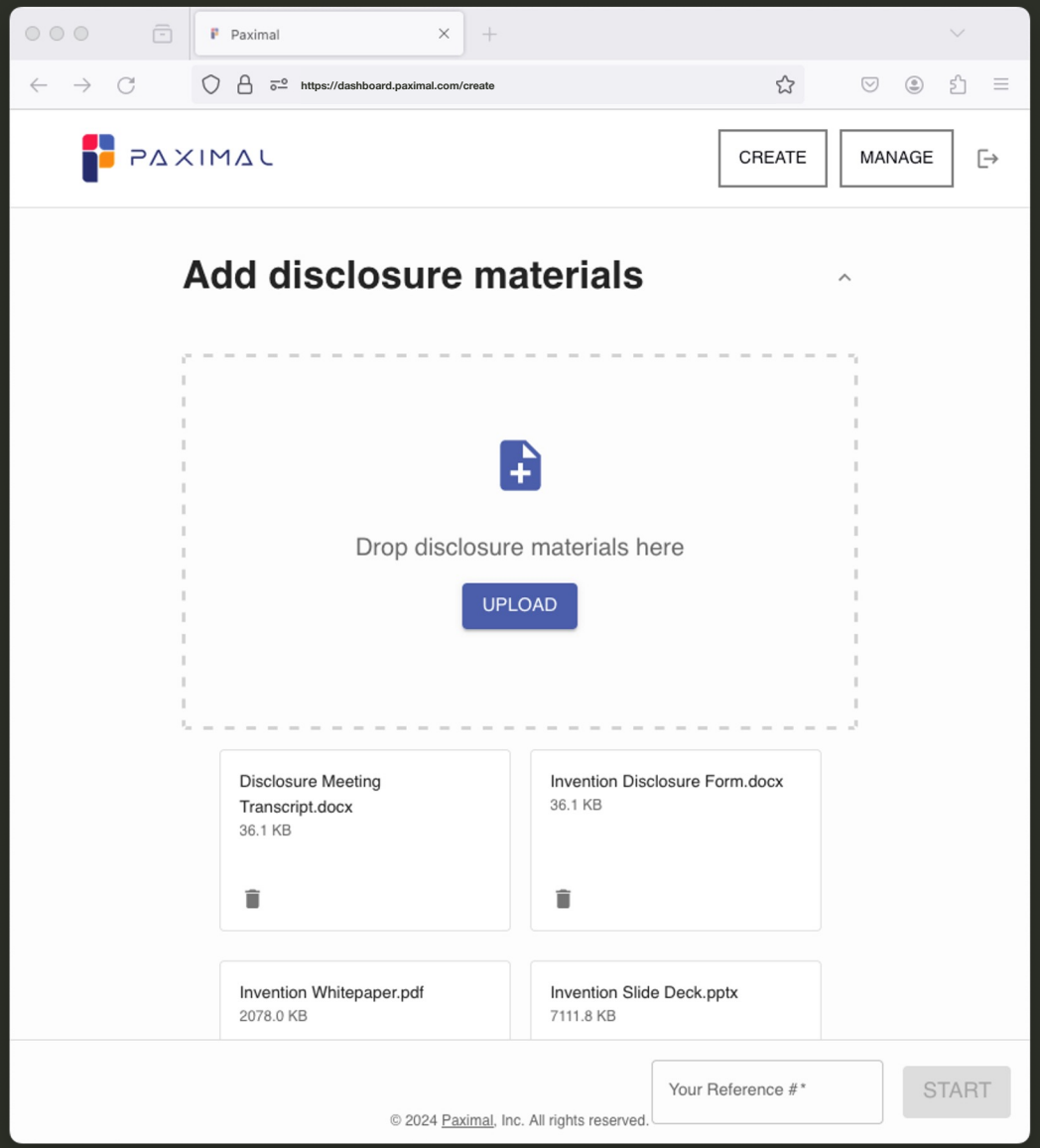
Proceed only if you can exercise extreme caution!

Selective Enhancement

- **Opportunities**
  - When drafting the specification, provide query to generate elaborated text for placement into specification
- **Concerns**
  - Lower scale hallucinations
  - Moderate efficiency improvements

Full First Draft

- **Opportunities**
  - Generate entire first draft patent application
  - Pairable with rules-based automated patent drafting and review software
- **Concerns**
  - High volume hallucination concerns
  - Some tools have limited input caps (e.g., 5000 words)
  - Input prompt is highly suggestive of generated output
  - Some tools are unimodal (e.g., no image input and no drawing output)
  - Broad industry feeling that automatically drafted claims are unacceptable (e.g., too narrow, no focus on point of novelty)
  - Some tools output very abbreviated specifications
  - Questions around human inventorship
  - Future duties of disclosure/certification around AI use in drafting?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START
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QUESTIONS?

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