

AI & the Patent System

PATENTLY STRATEGIC

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Patent Agent, Expert Witness and
Consulting Services for companies
and individual inventors.

AI for IP – Part I

Current Status

AI Ice Breaker

Think of a patent-related prompt for an AI image generator and we will see what it looks like!

<https://www.bing.com/images/create/>



“a woman writing a patent about a snowboard watercolor”

AI (including LLMs) Are Disruptive



“ChatGPT may be coming for our jobs. Here are the 10 roles that AI is most likely to replace.”

- Tech jobs (Coders, computer programmers, software engineers, data analysts)
- Media jobs (advertising, content creation, technical writing, journalism)
- **Legal industry jobs (paralegals, legal assistants)**
- Market research analysts
- Teachers
- Finance jobs (Financial analysts, personal financial advisors)
- Traders
- Graphic designers
- Accountants
- Customer service agents

<https://www.businessinsider.com/chatgpt-jobs-at-risk-replacement-artificial-intelligence-ai-labor-trends-2023-02>

“10 Industries AI Will Disrupt the Most by 2030”

- Healthcare
- Customer Service and Experience
- Banking, Financial Services, and Insurance (BFSI)
- Logistics
- Retail
- Cybersecurity
- Transportation
- Marketing
- Defense
- Lifestyle

<https://www.spiceworks.com/tech/artificial-intelligence/articles/industries-ai-will-disrupt/>

AI for Patents – Intro

- Part I – Current Status (Dave)
 - AI IP Searching overview
 - AI Proofreading
 - AI Patent prosecution overview
 - AI Drafting (rule-based)
 - AI Drafting (LLM-based)
- Part II – Future & Implementation (Ashley)

AI is powerful, and is improving all the time.

IP is complex and nuanced, and the stakes are high.

AI clearly deserves attention from IP practitioners, but efficient and effective implementation is not straightforward.

Many AI Tools for Patents

- There are many AI tools for patents out there
 - Minesoft
 - BlackHills
 - Dolcera
 - Patent Bots
 - PatSnap
 - PatentPal
 - Etc...

We will not discuss, endorse, or bash
any particular tools

AI IP Searching – Status

- search based on whole claims or an IDF (don't have to ID key words)
 - which can be good and bad...
- comprehensively review prior art at time of prosecution
 - could help address major issue at USPTO of “QC’ being done in the back end”
- search tool that can travel back in time
 - accurately determine historical PHOSITA knowledge
- DISCUSSION
 - any stories (+ive or –ive) about using AI search tools? *(I have one if no one else does.)*

AI is good at finding references that Boolean searches may miss, but the opposite is also true, so best to use both AI + Boolean!



AI IP Proofreading – Status

- in use for years
- antecedent basis, word/phrase support, figure/element numbers/labels, etc. (like spellcheck, or software debug tools, for patent professionals)
- summarize a document or contract, or compare differences between documents

In use for many years.
Invaluable time-saving and
quality-improving tools!



AI Patent Prosecution – Status

- analyze cited prior art compared to currently rejected claims, and the current spec
- suggest amendments to overcome prior art rejections
- compare claim amendments with previous claims for accuracy of markups

Great application of AI, and expect there to be more tools in this area. Comparing and contrasting a bounded set of information.

AI Drafting (Rule-Based) – Status



- figure/element renumbering/relabeling
- generate summary, brief desc of figs, claim clauses
- method claims \leftrightarrow flowcharts figs \leftrightarrow DD
- system claims \leftrightarrow block diag figs (or element labels) \leftrightarrow DD
- generate blank claim charts (e.g., for FTOs)

- Rule-Based vs. ML

- When to utilize rule-based models?
 - **Danger of error**
 - Speedy outputs
 - Etc.
- When to utilize machine learning models (e.g., LLMs)?
 - **Simple guidelines don't apply**
 - Pace of change
 - Etc.

<https://becominghuman.ai/the-key-differences-between-rule-based-ai-and-machine-learning-8792e545e6>

Rules-Based vs. Machine Learning (ML) systems (e.g., LLMs)

ML systems are ***probabilistic***, while rule-based “AI” models are ***deterministic***

Low error rate. Sometimes need to change drafting style to leverage the AI. Some limitations compared to LLM-Based tools.

AI Drafting (LLM-Based) – Status



- generate title
- generate abstract
- generate background from prior art refs
- generate DD ↔ claims
- generate sections based on specifically engineered prompts
- generate an entire patent from a sentence

This is what most people think when they hear AI, but there are currently challenges with (efficient) implementation!

- Given how LLMs work (i.e., leveraging well-known, often written about, information), will the quality of a patent (or OA response, Appeal Brief, etc.) *ever* be high enough without a lot of prompt engineering from a Patent Professional?
 - LLM-generated drafts can look like someone working outside of their technical field who is out of their depth
 - AI-generated drafts, responses, and third-party observations can appear responsive, but fail to make any substantive points or claim anything of substance
- Workflow – need to find the right fit
 - Consistent IDFs, more likely to efficiently leverage the right tool(s)
 - Mechanical arts with lots of figures vs. Biotech with DNA SEQs may leverage different tools

<https://ipkitten.blogspot.com/2023/10/use-of-large-language-models-in-patent.html>

Part II: Future of AI in IP

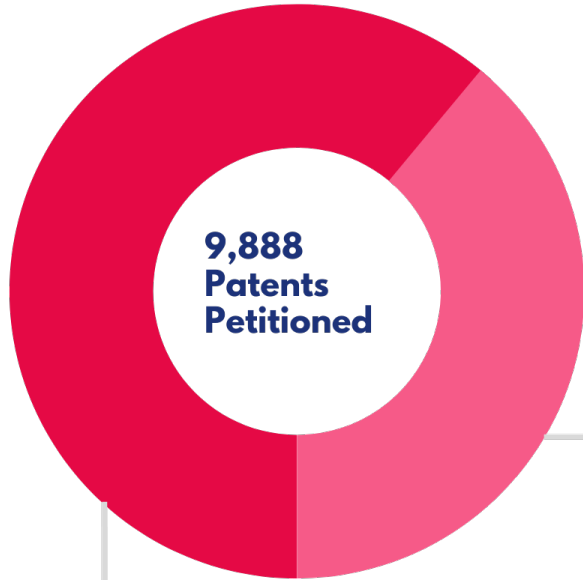
with Ashley Sloat

Patent System Issues

- Quality
- PTAB
- Shrinking pool of early career practitioners

Can access to AI change the trajectory?

PTAB Invalidation Rates



6,034 Patents
no determination due to all cases pending, dismissed, and/or settled

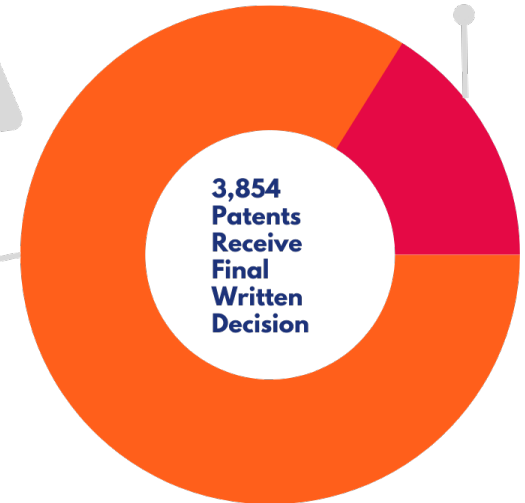
3,854 Patents

Receive a Final Written Decision

- Invalidated
- Not invalid

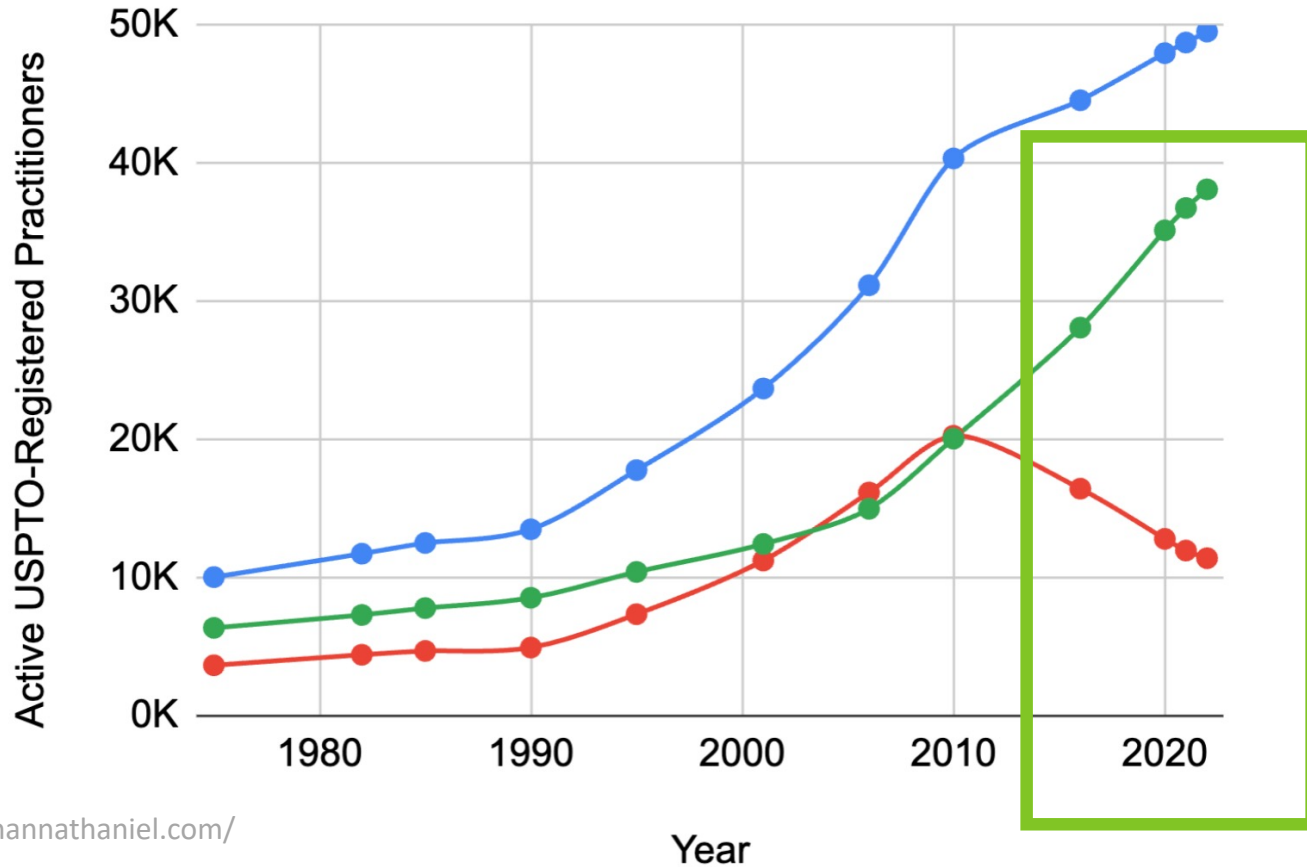
**84%
INVALIDATED**

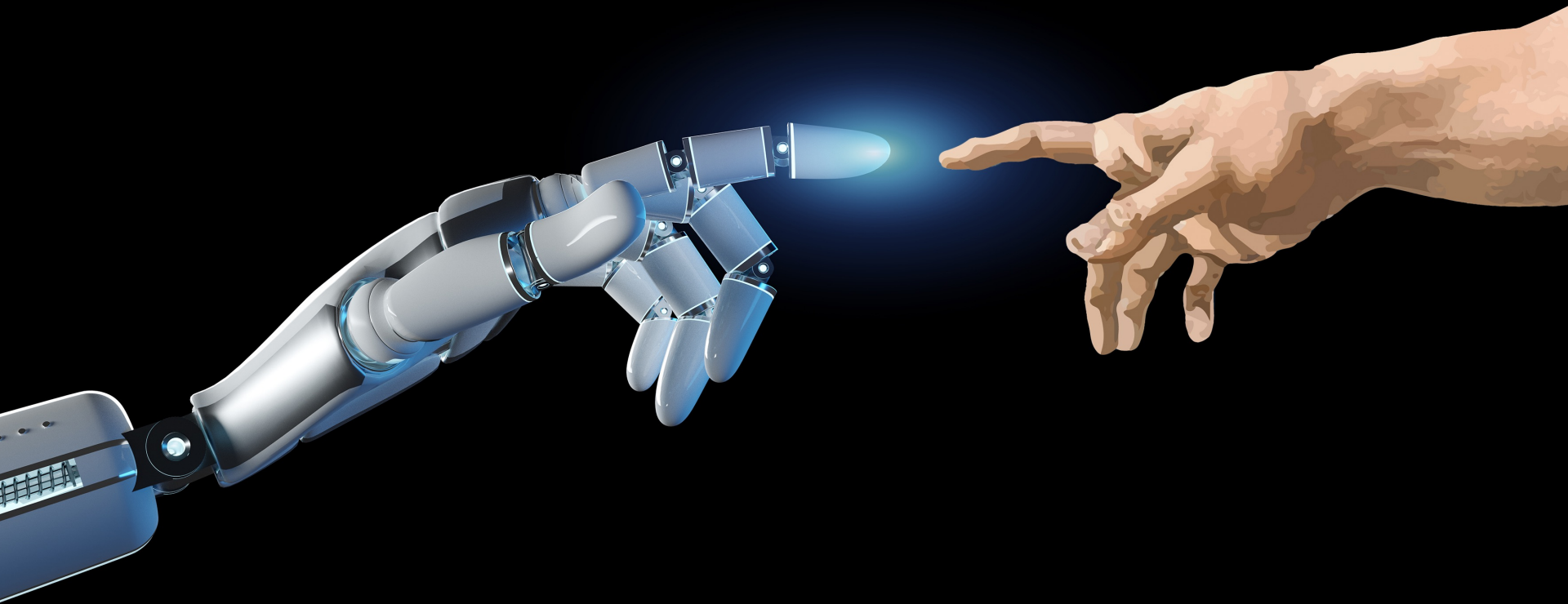
16% not invalid



Active Practitioners by Years of Practice

● All active practitioners ● 0-10 years of practice ● 10+ years of practice





Quality - Searching

How do the following change?

- Prosecution
- Litigation
- Post-Grant proceedings



produced by
Shari Finkelstein

talking
to the
past

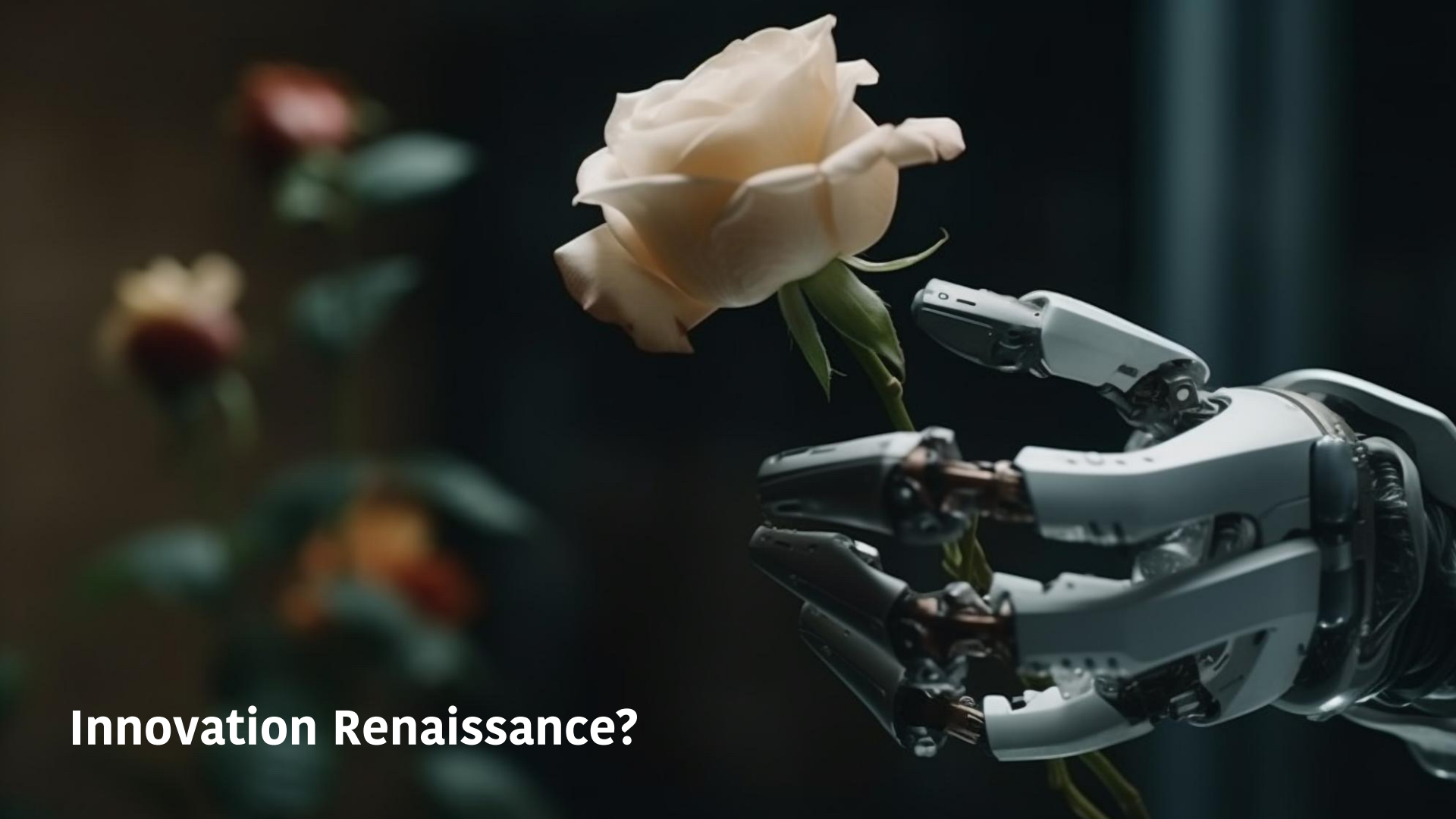
**AI as a PHOSITA - Unlock what
was known at any fixed point
in time?**

**Quality –
Searching & PTAB**

Increase Practitioner Output



- Investment required
- Implications have a long tail
- Workflow changes depending on user, client, project
- Age-related implications for workflow changes
- How are AI drafted docs received?



Innovation Renaissance?



“The future has not been written. There is no fate but what we make for ourselves.” – John Connor