

**UNITED STATES
PATENT AND TRADEMARK OFFICE**



Artificial intelligence (AI)/IT updates

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Patent Public Advisory Committee public meeting

UNITED STATES
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Results and retrospective

Public AI research challenge: U.S. Patent Phrase-to-Phrase Matching

Why a public AI challenge?

- USPTO: America's Innovation Agency
 - Deploying AI innovation in service of patent offices & stakeholders.
- Traditional IT product development:
Bringing ideas to impact.
- But how to source & validate ideas in the rapidly-evolving AI ecosystem?

Why a public AI challenge?

- USPTO: America's Innovation Agency
 - Deploying AI innovation in service of patent offices & stakeholders.
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- But how to source & validate ideas in the rapidly-evolving AI ecosystem?

Answer: Leverage the combined expertise and enthusiasm of the public research community.



Goal and approach

Goal

Enlist the **AI research & data science communities** to tackle **difficult AI & machine learning challenges** for the **benefit of the USPTO and the IP community**.















Approach

Run a **worldwide AI competition** based on **annotated USPTO Open Data** and **quantitative benchmarking**.



Implementation and results

- “U.S. Phrase-to-Phrase Matching Challenge”
 - Worldwide Kaggle competition
 - March–June 2022
 - Research objective: extract semantic meaning from technical language in patent documents
- Fierce competition:
 - **2,325** competitors representing **85** countries
 - **42,905** code submissions
 - **87.8%** top performance
- Alongside remarkable collaboration:
 - **1,413** discussion posts
 - **1,122** publicly shared code notebooks

#	Team	Members	Score	Entries
1	gezi		🥇 0.8782	100
2	Z & T	 	🥈 0.8775	82
3	S.X.R.D(gsdata)	  +2	🥉 0.8772	119
4	Ria~		🥈 0.8771	91
5	prompt is all you need		🥈 0.8766	87
6	hyd		🥈 0.8765	219
7	vialactea		🥈 0.8761	80
8	Team N	  +2	🥈 0.8757	104
9	Q. S.		🥈 0.8753	55
10	We did it!	  +3	🥈 0.8750	406



Post-competition outreach

- June 29: **AI & ET Partnership Inaugural Meeting**
 - Announcement of results by Director Vidal
- July 15: **PatentSemTech at SIGIR 2022 Madrid**
 - USPTO delegation: Jamie Holcombe and Jerry Ma
 - Google/Kaggle colleagues
 - Patent AI & NLP community
- July 27: **Global winner calls**
 - Top three contestants (prize money awardees)
 - USPTO: Chief Information Officer & staff



Takeaways

- Tremendous untapped potential within the global AI community
- Talent comes from everywhere:
 - Universities
 - Large tech companies & startups alike
 - Independent scientists & engineers
- **How to unlock that talent and bring it to bear on IP?**
 - High-quality, intuitive datasets
 - Meaningful benchmarks
 - Environment that fosters both competition and collaboration
 - Intrinsic motivation

Field report from the Chief Information Officer

Recent USPTO/UKIPO discussions: partnerships and best practices

AI product showcase

“More Like This” demonstration

Questions and comments

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