ARTIFICIAL INTELLIGENCE (AI) USAGE IN TRADEMARK CLEARANCE AND ENFORCEMENT

EMERGING ISSUES COMMITTEE

ARTIFICIAL INTELLIGENCE AND TRADEMARKS SUBCOMMITTEE

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According to a recent edition of the *ABA Journal*, law school technology programs are proliferating as the need to address legal issues created by technology becomes an increasingly important aspect of law firm representation and in-house positions with technology startup companies.[1] Moreover, on August 12, 2019, the ABA passed Resolution 112 urging courts and lawyers to address the emerging ethical and legal issues related to the usage of artificial intelligence in the practice of law. The Resolution provides that attorneys have a duty to identify the technology that is needed to effectively represent the client, as well as to determine if the use of such technology will improve service to the client:

> *RESOLVED, That the American Bar Association urges courts and lawyers to address the emerging ethical and legal issues related to the usage of artificial intelligence ("AI") in the practice of law including: (1) bias, explainability, and transparency of automated decisions made by AI; (2) ethical and beneficial usage of AI; and (3) controls and oversight of AI and the vendors that provide AI*.
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> ABA Res. 112 (Aug. 2019).

The INTA Emerging Issues Committee's AI Subcommittee, Task Group 1, AI and clearance, and Task Group 2, AI and protection/enforcement, have undertaken to explore the practical aspects of AI as applied to trademark clearance and enforcement which are high liability areas in trademark practice for lawyers who must provide trustworthy advice and counsel at important stages of trademark portfolio management and brand development. The clearance and enforcement groups conducted interviews with vendors that provide clearance and/or enforcement services. Below are vendor charts that summarize each vendor's AI capabilities based upon our interviews.

[1] Stephanie Francis Ward and Jason Tashea, *Too Far Ahead of the Curve?*, ABA Journal, March 2019, at 36.

TRADEMARK CLEARANCE VENDORS[2]

For AI clearance, the vendors that have been interviewed are Compumark/Clarivate, Corsearch, TMTKO, Markify, TrademarkNow, Fovea and Wilyfish. These vendors provide AI capabilities for trademark clearance that include machine-learning techniques informed by lawyer input. Specific tasks that are accomplished include name generation, image searching, conflicts analysis, office action analysis, scoring similarity of marks across government PTO and common law databases, and analysis of legal aggressiveness of competitors. Future AI capabilities will include risk analytics for trademark applications, trademark registry research, increasingly precise image algorithms, word splitting analysis, *i.e.*, identifying pieces of words to be analyzed separately on par with human capability, and multiple word trademark analysis.

Vendor Name and Rep Interviewed	AI Current Capabilities	AI Future/Intended Capabilities	Requirements for use of AI Features
Compumark /Clarivate www.compumark.com Sandra Ma, VP Trademark Vision, IPG Innovation & Research, Clarivate Analytics	AI has been integrated into all of Compumark's platforms. Clarivate has a name generator. It is used by clients that are conducting clearance searches and are finding conflicts. The concept behind the generator is to help select a new mark that meets certain criteria which is then arrayed across already existing marks. Conflicts are more easily resolved. The searcher provides the general concept of what type of mark	One future direction is the focus on risk analytics for trademark applications. Compumark recently acquired DARTS IP which is an IP case law company. For example, if there is a goods and services issue, the program will pull cases where one set of goods or services was rejected over another, and then compile statistics around those comparables. Compu-mark is trying to train Compumark AI data with case law data. Also, they are	Available for all subscribers. Rates vary depending upon volume.

[2] We are aware of the following additional trademark searching vendors but information on their AI capabilities was not attainable during our period of research for this report: The Trademark Search Company; SMD Group; Marquesa Trade Mark Search Systems.

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	they want, i.e., one that incorporates an arrow, specific goods and services, and then seeds the query with a concept that is to be conveyed. The name generator, using natural language, incorporates the general concepts, the international classes, and the seeded suggestion for the mark (strong, soft, young, old, aggressive) and filters availability against trademark and domain name registers. It is a reimagining of how trademarks get developed. The target audience is in-house legal and marketing departments. TM go365 Word uses natural language processing to break down a word to understand variations and bring back smart results. TM go365 Image uses AI for machine learning techniques instead of having to understand Vienna Codes, US design codes or key words to describe a picture. AI will find the most relevant image based on the image uploaded for both visual and contextual similarity. Image searching is very difficult across multiple jurisdictions because different jurisdictions use different codes. The database currently catalogs 189 jurisdictions. TM go365 Design uses AI to run design patent and industrial design searches in Europe. The	developing AI for trademark clearance. The risk analytics will say how risky the mark is and then quantify the risk with actual cases.	

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	program currently incorporates prior art from 23 jurisdictions.		
TMTKO https://www.tmtko.com Matt Schneller, Partner	- Search: complementary mix of data-aware intelligence and attorney-developed rules identify relevant results and compare risk levels. - Office Action Analysis: uncovers prior filings that overcame similar refusals to the facts in the user's Office Action. - ThorCheck: comparative data analysis, finding evidence to push back on 2(d) refusals on mark similarity or goods/services relationship grounds. - Data management: classification of transfers, translations, etc.	- Extend and improve existing research tools, and expand types of ThorCheck (registry-based evidence) research.	- Available to all subscribers. Monthly rate to use the platform is $250 per month or $75 for a day pass.
Markify https://www.markify.com Benoit Fallenius, CEO	A. Word mark similarity: 1. Search built on machine learning using data from more than 1 million oppositions and 2(d) citations. Accuracy of more than 99% of all potential conflicts. 2. Ranking of individual results the order of likelihood of confusion. 3. Language adapted to all major languages. B. Image mark similarity (design marks/device marks). 1. Search built on a global trademark image data set of 10 million marks. Technology: deep learning/neural networks. 2. Ranking based on similarity level.	Develop even more precise image algorithm to fully substitute Vienna codes / Design codes.	USA Algorithm Based Searches (incorporates machine learning/AI technology): $129 per report (pricing for 5 classes and includes federal and common law searches such as web images and social images). Also participate in a

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			30 minute online demo.
TrademarkNow* https://www.trademarknow.com Charlie Hill, our Head of Product and also INTA committee member *During the preparation of this report, Corsearch acquired TrademarkNow. Therefore, this information should be read in conjunction with the information on Corsearch.	The purpose of TrademarkNow's AI is to score the similarity between trademarks, in order to save lawyers time in processing trademark searches. TrademarkNow's AI engine has been in the marketplace for eight years, and was in development (in an academic context, at the University of Helsinki) for about a decade prior to that. It's a hybrid AI system, incorporating both expert systems (where the machine is taught a series of rules for how to handle different situations by real life trademark lawyers) and machine learning neural networks (where the machine is taught to teach itself, based on identifying patterns in the training data it is fed during development, and then by real life experience, such that the machine's performance as judged by trademark lawyers will improve over time). TrademarkNow's AI has multiple components that tackle the task of scoring trademark similarity. First, their Clearance Search product, NameCheck, built on top of the AI engine, takes the user's query (a new trademark name, product types or	At this point in our history, there really is just tweaking going on to improve the AI's performance in different scenarios. One such area is in improved "word splitting" - identifying pieces of words as a human being would, so that those pieces can be analyzed separately in a proper way. Another is improving performance in multi-word marks, e.g. cases where "multiple weak words make a strong trademark together" in different industries. These are hard problems that take lots and lots of examples for the AI to "learn" and thus improve.	AI Clearance Search: $129.99/search. TrademarkNow's AI search platform looks across your choice of 10 country registries, web and common law data, to safely find all similar trademarks. Results can be in seconds. Really, just a subscription to TrademarkNow (or, the purchase of a single AI clearance search via our online store). The beauty of AI is that the user shouldn't have to do much to realize the benefits - he/she is benefitting from the expertise built into the system over

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	classes, and intended regions) as a starting point. From there, it looks at the languages spoken in the regions in which the user's product will be launched and tries to determine if the user has entered real words, or parts of words (prefixes, suffixes, stems, etc.), in those languages. It will then look at the commonness of those words in the user's product types in those regions, to determine what we call the "brand strength" of the different pieces of the user's name - words that are more distinctive and less descriptive are considered stronger. The AI then looks at the pool of existing trademarks across both government PTO and common law databases relevant to the user's query ("search targets"), and begins to score the similarity of the user's mark versus all others in four different ways: by look (visual similarity), sound (phonetic similarity), meaning (semantic similarity) and product distance. Finally, the AI looks at known competitors (from the user's product types), absolute grounds for rejection, and the "legal aggressiveness" of the different potential opponents, and includes these in the search results - and builds a report of search results for		time, and from the thousands of prior examples that other users have already given the machine to learn from.

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	the user. As with a Google search, the report is deceptively simple looking - just a list of relevant trademark results listed in decreasing order of similarity, with everything baked into the similarity score (shown at the left hand side). But within these scores there's a lot going on under the hood, which the user can basically ignore.		
Fovea https://www.foveaip.com/en Brent Raymond; Patrice Vekemans	https://youtu.be/9bgT2Sn3NS4 Offers worldwide image searching through AI. Can upload an image and it searches the image for similarity, accessing worldwide updated and searchable data covering more than 130 million records. Transliterated from various scripts to Latin characters; All data translated to English. Queries are structured according to 40 criteria for an expert search. The AI orders the results from most to least relevant. Algorithms propose search strategy; search strategy can be manually adapted if needed. Also uses AI for word mark similarity; can set alerts and search analytics, i.e. competitive filing info.		Flat fee subscriptions – not per usage unless want some extra features a la carte

Vendor Name and Rep Interviewed	AI Current Capabilities	AI Future/Intended Capabilities	Requirements for use of AI Features
WilyFish Stevan Lieberman www.wilyfish.com/	**From website:** "WilyFish allows all registered users to search the United States Trademark Office database for free ordering the results using AI to find confusingly similar marks. Leverages AI and a continuous crawl to find your brand across the Internet." **From Stevan's email:** "we try to take the guess work out of confusingly similar using AI and the AI learns how the user works and what is important to them over time and pushes those things to the top based on the users patterns." **Telephone call:** Uses AI throughout system for image searching, internet monitoring (next tab) and USPTO TESS searching. WilyFish downloaded the entire USPTO database. AI offers multi-layer searching and develops rules based upon users' usage to tailor results according to rules set by user. Can conduct ongoing searches; create "folders" which are based on actions such as a letter or report to a client or a C&D letter to a competitor; can operate like a case management system.	Coming out with new image searching - more advanced algorithm; fine tuning programming. A next step is to develop international searching - cannot download the whole database of WIPO or EU like USPTO so needs to rely on using the API, which limits functionality. Also coming out with new workflows and subscription options.	The subscription fees are monthly flat rates ranging from $35 to $250 and each user can try 150 searches free.

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Corsearch https://corsearch.com/	The purpose of AI that is used in our clearance searching is to score the similarity between trademarks, in order to save time and effort in processing trademark queries and/or searches. Corsearch uses AI that has been developed over several years in engines that support the screening and search business, including the recent addition of Trademark Now business. The AI system, incorporates both expert systems (where the machine is taught a series of rules for how to handle different situations) and machine learning neural networks (where the machine is taught to teach itself, based on identifying patterns in the training data it is fed during development, and then by real life experience, such that the machine's performance as judged by users will improve over time). The AI that supports some of the Corsearch services has multiple components that also tackle the task of scoring trademark similarity and prioritizing the order in which results are delivered utilizing many specific factors to replicate industry expertise.		The requirements for use of AI features would be utilization of the Corsearch services in which AI is utilized for the product offerings.

TRADEMARK ENFORCEMENT /WATCH VENDORS[3]

For AI enforcement, the vendors that have been interviewed are TMTKO, Markify, TrademarkNow (recently acquired by Corsearch), Corsearch, Darts-IP (recently acquired by Clarivate), and Wilyfish. The Vendors discussed current capabilities that include automated website analysis for trademark and counterfeit protection, global watch analysis, machine learning of opposition citations for potential conflicts, international languages, extraction of data from legal documents such as legal issues and names of parties, internet monitoring with automated cease and desist letters, and client training on these functions. Future capabilities mirror those for clearance with an emphasis on greater customization.

[3] We are aware of the following additional trademark watching and enforcement vendors but information on their AI capabilities was not attainable during our period of research for this report or the company reported not having AI capability: Compumark/Clarivate and Marksmen (Compumark referred us to Marksmen for their watching and enforcement and Marksmen reported not yet using AI in its services); Towergate Software; CheckMark Network; CSC; SMD Group; AppDetex; CounterFind; OpSec Security; Questel (Orbit Trademark!); Safenames; Seraphin.legal; Hyperlex.

Vendor Name and Rep Interviewed	AI Current Capabilities	AI Future/Intended Capabilities	Requirements for use of AI Features	Additional Comments
Markify https://www.markify.com Benoit Fallenius	According to website, uses trademark similarity algorithm for watch service activities; see additional information on clearance page A. Word marks: 1. Trademark watch built on machine learning using data from more than 1 million oppositions and 2(d) citations. Accuracy of more than 99% of all potential conflicts. 2. Ranking of individual results in the order of likelihood of confusion. 3. Language adapted to all major languages. B. Image marks (design marks/device marks). 1. Trademark watch of design marks/device marks built on a global trademark image data set of 10 million marks. Technology: deep learning/neural networks. 2. Ranking based on similarity level.	Online brand monitoring built on machine learning (ML).	Participate in a 30 minute online demo	
BrandShield https://www.brandshield.com Itai Galmor, VP Marketing and Sales	Website references automated processes for trademark and counterfeit protection activities; references AI technology in other areas (anti-phishing product)			

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TMTKO https://www.tmtko.com Matt Schneller, Partner	- Watch: derived from the search capabilities described above. - ThorCheck: see above; supports use in TTAB proceedings and other disputes	- Extend and improve existing tools	- Unlimited watch is available to all subscribers.	

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TrademarkNow https://www.trademarknow.com Charlie Hill, our Head of Product and also INTA committee member	Our trademark watching product, NameWatch, is built on the same AI engine as NameCheck. In this case, though, it is running the search in reverse - taking all the new marks listed in those registries the user cares about as a starting point, and comparing these against the user's own brands to score similarities. The benefit that the AI really delivers for the user with watching, of course, is the scope: it can instantly compare thousands of newly-added marks from around the world, and sift through just the ones that are similar enough to be of concern for inclusion as watch notices (and in particular, opposable watch notices). This allows our clients to watch many more of the marks in their portfolio cost-effectively than was ever possible before.	With respect to the AI itself, really the same set of issues as with Trademark Clearance, above. Our main improvements with NameWatch over the next year will be related to customizing the setup of your Watches - being able to set who on your team watches which marks, in which business units and regions, how often and to what degree of similarity.	To set up a Watch in our system, the user must first build and confirm his/her organization's portfolio of trademarks across different regions. This is semi-automated, using company and subsidiary/business unit name similarities and corporate trees to set up initial proposed portfolios for the user. But this must be confirmed by the client in order to confirm accuracy of the marks that should be watched.	

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WilyFish http://www.wilyfish.com Stevan Lieberman	Offers internet monitoring system with capability to send cease and desist letters or start a UDRP proceeding. System is more automated than other internet monitoring systems with very little manpower which makes it most economical. Can search domain names historical data including registrant data, DNS and IP System. Allows user to create "folders" which are based on actions such as a C&D letter, a new UDRP proceeding; operates like a case management system. **From website:** WilyFish's systems are capable of searching the Internet based on numerous factors. Common Examples: Training on how to identify all images on the client's website and then searching the Internet based on keywords to see if any single product is being sold. Training on how to identify particular products and then searching the	Fine tuning programming; also coming out with new workflows and subscription options.	The subscription fees are monthly flat rates ranging from $35 to $250 and each user can try 150 searches free.	

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	web to see if the product is being offered at a price point that is 50% or less than the provided list price. Training on how to identify particular images to find out if they are being used across the Internet. Training on how to identify video to find out if the video is being used across the Internet.			

Darts-ip https://www.darts-ip.com/ (recently acquired by Clarivate, which also owns CompuMark) Claire Fobe	In the field of Intellectual Property, classification of documents by type (e.g. subpoenas versus decisions), extraction of specific information from documents (names of parties, registration numbers, ...), extraction of legal issues discussed, ...	Extracting product comparisons	A threshold of reliability is determined by comparing it with the performance of manual classifications - the goal being to do better than manual classifications.	For the time being, AI is used by Darts-ip to classify documents by type, and jurists do legal analysis of the legal issues discussed in the decisions. As the volume of documents collected on the database increases, the company is beginning to use AI to automatically analyze certain decisions that use the same format (e.g. decisions of trademark offices relating to provisional refusal of international trademark applications for lack of distinctiveness). Eventually, Darts-ip would like to make greater use of AI to achieve a fully automated analysis of all decisions.

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Corsearch https://corsearch.com	AI is also utilized in watching services as well. In this case, it is running the search in reverse - taking all the new marks listed in those registries the user cares about as a starting point and comparing these against the user's own brands to score similarities. The benefit that the AI really delivers for the user with watching, of course, is the scope: it can instantly compare newly filed marks from around the world and aid in identification of ones that are deemed as confusingly similar watch notices. In addition, Corsearch utilizes AI for the brand protection service offering in which we ingest massive amounts of online data spanning: domains, websites, social media, marketplaces and mobile app stores in order to identify potentially infringing use, counterfeit, gray trade, compliance and other related content issues that can adversely impact the value of the brand. AI, machine learning and other criteria are utilized to narrow the results to provide most relevant content for	- Extend and improve existing tools		The requirements for use of AI features would be utilization of the Corsearch services in which AI is utilized for the product offerings.

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	potential enforcement for word and image related brand issues.			

From the research on the trademark searching and watching vendors currently offering AI capabilities, and our inventory of those capabilities, the clearance and enforcement task groups conclude that AI is still people driven, with AI learning from people and then adding speed to the information collection and sorting process. Analysis and risk tolerance are still in the hands of lawyers and their clients and presumably emerging ethical and legal issues related to AI are in lawyers' hands as well.