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 **NORTON ROSE FULBRIGHT**

# The Robot Lawyer?

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September 28, 2017

# Contents

Introduction

What are we trying to accomplish?

Commercial applications

Conclusion

# Introduction

# Will the future look like this?

Meet Ross, the World's First Robot Lawyer

## Why Hire a Lawyer When a Robot Will Do?

Artificial intelligence is learning to do legal grunt work.

By Elaine Ou

11 September 22, 2016 2:00 AM



Cheap and efficient. Photographer: Paul Gilham/Getty Images



The Latest in 'Technology Will Make Lawyers Obsolete!'

Robot lawyer set to replace 3,000 employees at Sberbank





Lawyers could be the next profession to be replaced by computers

## Law firms of the future will be filled with robot lawyers

We may need to start rewriting our precious lawyer jokes — smart, time-saving computers are quickly elevating the profession.

Instead of hiring expensive assistants to pore over cases and sort through tickets, law firms are increasingly turning toward artificially-intelligent machines to do the expensive menial jobs instead.

They are creating a future in



Or more like this?



ARTIFICIAL INTELLIGENCE, LEGAL TECHNOLOGY, PROMOTED

## Artificial Confusion: The (Overblown) Threat Of Artificial Intelligence

The reality is that we are many years away from the rise of artificial superintelligence, especially in the legal industry.

By JAKE HELLER - CASETEXT

Sep 14, 2017 at 12:34 PM

# The robot lawyers are coming (to help, not to take your jobs)

POSTED MAR 17, 2017 04:10 PM CDT

BY VICTOR LI



IBM Global Chief Information Security Officer Shamla Naidoo and FastCase CEO Ed Walters. Photo by Monica Burciaga.

There is no such thing as robot lawyers, and even if there were, they are not coming to take jobs away from human lawyers.

Instead, lawyers should think about how best to work with and harness the potential of software and artificial intelligence to propel their practices forward while bridging the access-to-justice gap.

**Where machine learning and AI fit into the legal research puzzle**

**Don't fear AI;  
we're all algorithms anyway**

Let's take a step back ...





# A BRIEF OVERVIEW OF AI



## ARTIFICIAL INTELLIGENCE (AI)

A branch of computer science that aims to create intelligent machines that can mimic human decision-making processes.



### 1956

The term  
Artificial Intelligence  
is first coined by  
John McCarthy



### 1997

IBM's Deep Blue Computer  
beats Russian chess master  
Garry Kasparov (AI)



## MACHINE LEARNING (ML)

Machines take  
data and "learn"  
for themselves,  
allowing them to  
improve at tasks  
with experience.



### 2011

IBM's Watson beats human  
players on US game show  
Jeopardy (ML)



## DEEP LEARNING (DL)

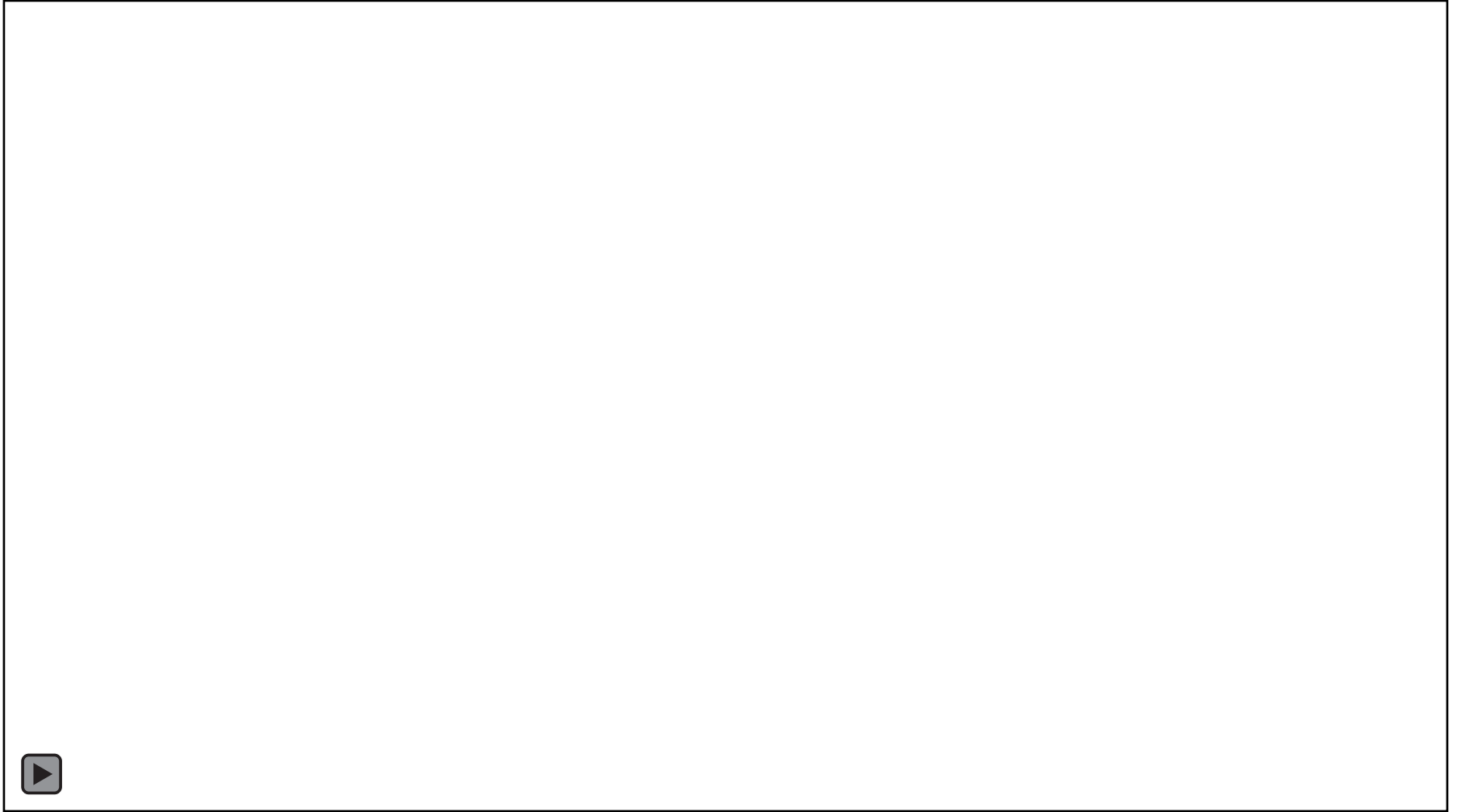
Multilayered neural  
networks are exposed  
to vast amounts of data,  
training machines to  
solve any problem which  
requires "thought."



### 2016

Google's AlphaGo beats  
boardgame Go master  
Lee Sedol (DL)

# Turing test





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# Branches of AI

Big Data and predictive analytics

Machine learning

Cloud computing

Natural language processing

# Artificial Intelligence

has no agreed-upon definition.

Just like human intelligence, AI has a number of capabilities.

And while AI's ability differs between vendors and the quality of their technology, at its core, it can process data with *"human-like knowledge."*

# Economic implications of AI

By 2030, Artificial Intelligence will add  
**\$15.7 trillion** to the global economy.

That's roughly:



x13

the size of  
Australia's GDP

(US\$1.21 trillion)



x19

Apple's market  
capitalization

(US\$815 billion)



x186

Bill Gates'  
net worth

(US\$84.6 billion)



x4,132

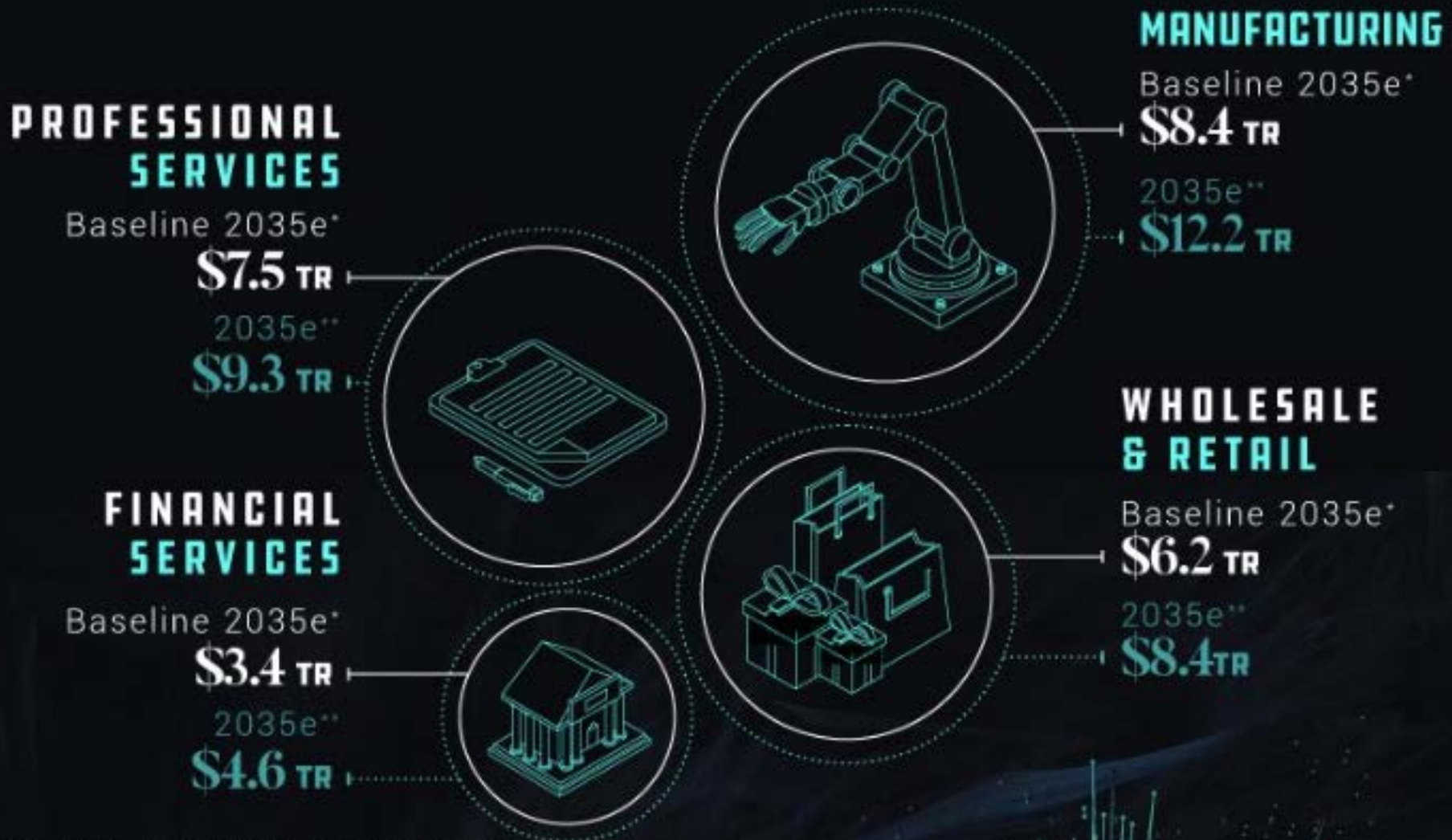
the cost to build the One  
World Trade Center

(US\$3.8 billion)

Source: Forbes, NASDAQ

Source: Forbes NASDAQ

# The four sectors which stand to reap the most out of adopting AI technology are:



\*"Baseline" = Estimated growth without AI in 2035e.

\*\*"2035e" = Estimated growth with AI in 2035e.

Source: Accenture



**What are we trying to accomplish?**

# Desired accomplishments

Predict case outcomes

Predict legal costs

Find relevant documents

Streamline contract terms

# Predict case outcomes



# Predict legal costs

Assumption:

- No idea how the litigation develops
- No knowledge how a deal between two parties will progress and what resource might have to be added
- No certainty that the product won't face any liability issues

# Find relevant documents



# Streamline contract terms

Assumption:

- What we do is so unique it can't be automated



# Commercial applications in the legal field

# Legal applications

Machine Learning and data mining

Predictive Analytics

Lawbots to automate minor and repetitive legal tasks

Legal reasoning

# BloombergLaw – Points of Law

## What it does

Points of Law helps legal researchers quickly find language critical to a court's reasoning and to support their legal arguments.

As a researcher scrolls through a court opinion, it highlights the essential language in the opinion, making it easier to browse through the key discussion points and enabling the researcher to more quickly get the gist of the key holdings.

## How it works

State v. Hanson, 279 S.W.3d 265 (Tenn. 2009), Court Opinion

Standard of Review

"When considering a sufficiency of the evidence question on appeal, the State must be afforded the strongest legitimate view of the evidence and all reasonable inferences that may be drawn therefrom." *State v. Vasques*, 221 S.W.3d 514, 521 (Tenn.2007). "The credibility of the witnesses, the weight to be given their testimony, and the reconciliation of conflicts in the proof are matters entrusted to the jury as the trier of fact." *State v. Campbell*, 245 S.W.3d 331, 335 (Tenn.2008) (citing *Byrge v. State*, 575 S.W.2d 292, 295 (Tenn.Crim.App.1978)). When the sufficiency of the evidence is challenged, the relevant question is whether, after reviewing the evidence in the light most favorable to the State, any rational trier of fact could have found the essential elements of the crime beyond a reasonable doubt. See *Tenn. R.App. P. 13(e)*; *Jackson v. Virginia*, 443 U.S. 307, 319, 99 S.Ct. 2781, 61 L.Ed.2d 560 (1979). Because a verdict of guilt removes the presumption of innocence and raises a presumption of guilt, the criminal defendant bears the burden on appeal of showing that the evidence was legally insufficient to sustain a guilty verdict. *State v. Evans*, 838 S.W.2d 185, 191 (Tenn.1992). "This standard is the same whether the conviction is based upon direct or circumstantial evidence." *State v. Sutton*, 166 S.W.3d 686, 689 (Tenn.2005); see also *State v. Brown*, 551 S.W.2d 329, 330 (Tenn.1977).

In the absence of direct evidence, a criminal offense may be established exclusively by circumstantial evidence. *Duchac v. State*, 505 S.W.2d 237, 241 (Tenn.1973); *Marable v. State*, 203 Tenn. 440, 313 S.W.2d 451, 456-58 (1958). If entirely circumstantial, the facts and circumstances must "be so strong and cogent as to exclude every other reasonable hypothesis save the guilt of the defendant." *State v. Crawford*, 225 Tenn. 478, 470 S.W.2d

POINT OF LAW

On appeal, the State is entitled to the strongest legitimate view of the evidence and all reasonable and legitimate inferences which may be drawn therefrom.

View This Point of Law

Most Cited Cases (of 1976) Expressing this Point of Law:

- State v. Carruthers, 35 S.W.3d 516 (Tenn. 2000), Court Opinion
- State v. Hall, 8 S.W.3d 593 (Tenn. 1999), Court Opinion
- State v. Smith, 24 S.W.3d 274 (Tenn. 2000), Court Opinion

Citation Map Related Points

# Brainspace

## What it does

Brainspace is a collaboration tool that is based on a large-scale machine learning platform.

Brainspace rapidly ingests millions of pages of unstructured text, dynamically learning without taxonomies or ontologies.

The learned content is surfaced through advanced, interactive visualizations, giving the full power of Brainspace to every user.

## How it works

**THE ENTERPRISE CONNECTED LIKE NEVER BEFORE**  
*Search, discover, learn, collect & annotate.*



## What it does

CARA then instantly searches Casetext's database of millions of legal documents and hundreds of thousands of articles published by practicing lawyers to find similar, on-point cases, using a proprietary algorithm developed by their data scientists.

# Hi, meet CARA.

Drag your brief here

CHOOSE FILE

The **Heatmap** lets you jump directly to the heavily cited passages.

**Negative treatment flags** signal that you may not want to rely on a case.

**Summaries from subsequent cases** give you a quick sense of how this case is about and how you might use it.

**Key passages** point you to the most heavily discussed parts of the case.

**Citing cases** give you a sense of how the case has been treated, and point you to other relevant cases.

To learn more about a particular passage, click to view cases which specifically discuss that passage.

**CaseText**

Search cases, statutes, and regulations

CASES

STATUTES

REGULATIONS

U.S. Supreme Court • 411 U.S. 792 (1973)

**ADVERSE TREATMENT**

**MCDONNELL DOUGLAS CORP. V. GREEN**

SUMMARIES FROM SUBSEQUENT CASES (2)

"Holding in employment discrimination case that statistical evidence of employer's general policy and practice may be relevant circumstantial evidence of discriminatory intent behind individual employment decision"

*Revised • Miller, Inc. 14-088 (10th Cir. Nov. 20, 2015)*

**KEY PASSAGES**

"The burden then must shift to the employer to articulate some legitimate, nondiscriminatory reason for the employee's rejection. We need not attempt in the instant case to detail every matter which fairly could be recognized as a reasonable basis for a refusal to hire. Once petitioner has assigned respondent's participation in unlawful conduct against it as the reason for its rejection, We think that this suffices to shift the burden back to the employer."

**ADVERSE TREATMENT**

MR. JUSTICE POWELL delivered the opinion of the Court.

The case before us raises significant questions as to the proper order and nature of proof in action under Title VII of the Civil Rights Act of 1964, 78 Stat. 253, as U.S.C. § 2000e et seq.

Petitioner, McDonnell Douglas Corp., is an aerospace and aircraft manufacturer headquartered

**INSIGHTS (3)**

**Employment Discrimination: Hostile Work Environment, Dispute...**

Also, Elin was terminated. A plaintiff can satisfy the prime facts element from McDonnell Douglas Corp. v. Green, 411 U.S. 792, 802 (1973) (1) the plaintiff belongs to a protected class, (2) he was performing according to his employer's legitimate expectations, (3) he suffered an adverse employment action, and (4) similarly situated employees were treated more favorably, or other circumstances surrounding the adverse employment action give rise to an inference of discrimination. In the discrimination, a

**CITING CASES (7485)**

**ST. MARY'S HONOR CENTER V. HICKS, 505 U.S. 502 (1992) • CITING 43 TIMES**

After being demoted and ultimately discharged, Hicks filed suit, alleging that actions had been taken because of his race in violation of 42 U.S.C. § 1981a (1) Title VII of the Civil Rights Act of 1964. Adhering to the allocation of the burden of production and the order for the presentation of proof in Title VII discrimination treatment cases that was established in McDonnell Douglas Corp. v. Green, 411 U.S. 792, the District Court found that Hicks had established, by a preponderance of the evidence, a prima facie case of racial discrimination; that petitioners had rebutted that presumption by introducing evidence of two legitimate, nondiscriminatory reasons for their actions; and that

**MORE INSIGHTS**

**MORE CITING CASES**

# Chatbots

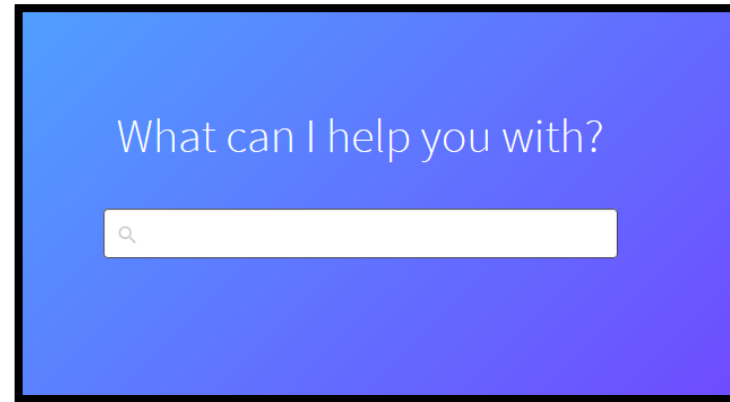
## What is a chatbot

A chatbot is a conversational computer program, such as virtual assistance.

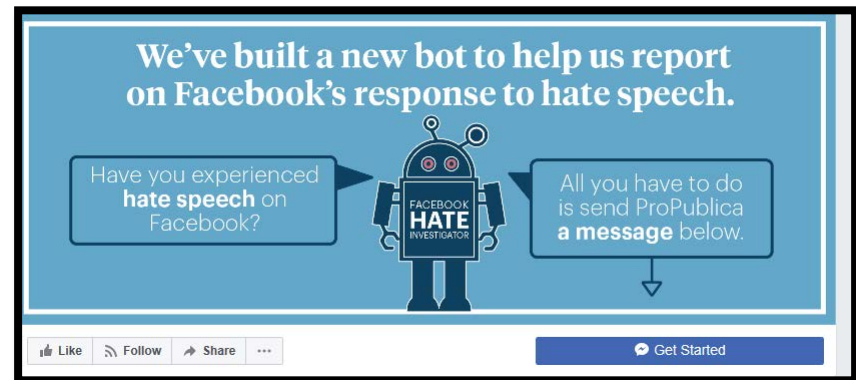
It can be used for customer service requests, information acquisition or promotion of a particular product.

## Examples of chatbots

**DoNotPay** – inventor calls it “the world’s first robot lawyer”, it helps defeat parking tickets:



**ProPublica** – a Facebook chatbot:





# Fastcase

## What it does

Fastcase was originally developed as an inexpensive case pull alternative to Westlaw and Lexis.

It has since grown into an advanced research tool with the connection to HeinOnline and the ability to customize the platform using a firm's data.

As a member of the Texas State Bar, access is available at no additional costs.

## How it works



# Kira

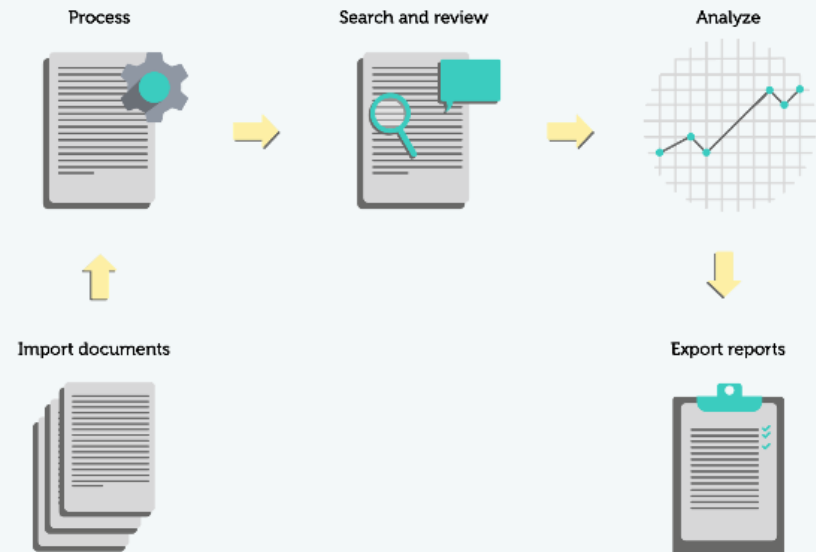
## What it does

Kira helps complete contract review more quickly by automatically highlighting and extracting relevant contract language in virtually any file format.

## How it works

### The Kira contract analysis platform

Kira makes powerful machine learning artificial intelligence accessible to everyone, through an intuitive user interface that features real-time collaboration and flexible project management.



# Lex Machina

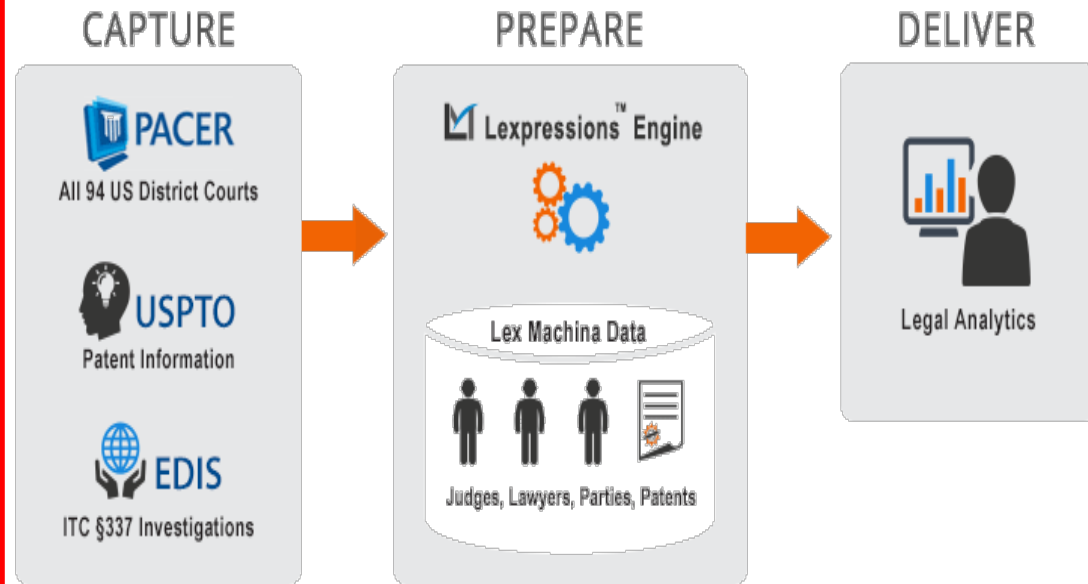
## What it does

Lex Machina captures data by crawling a number of legal databases and then its proprietary Natural Language Processing and Machine Learning engine.

Lex Machina then delivers Legal Analytics<sup>®</sup> to users through its web application.

LexMachina is part of LexisNexis.

## How it works



# Neota Logic

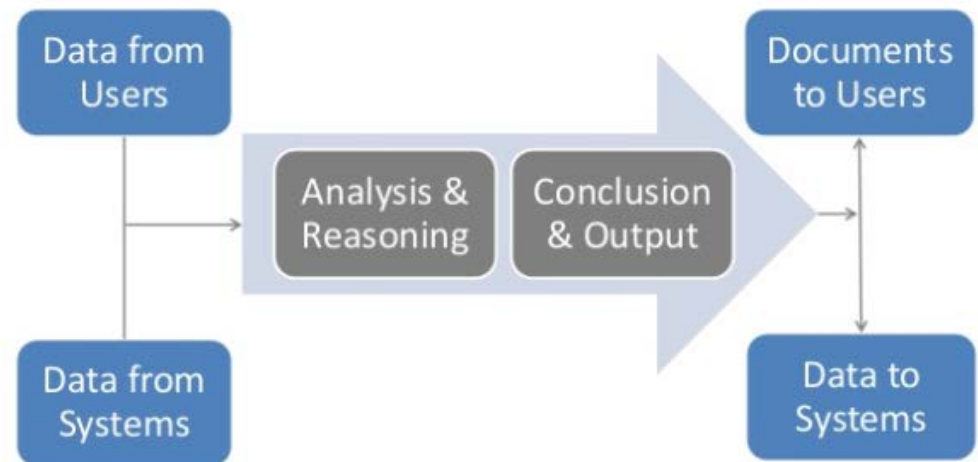
## What it does

Neota Logic's provides a no-code approach, which allows non-programmers to develop, test and implement applications.

These applications are capable of addressing rules-based functions, complex reasoning, document logic and process workflow.

## How it works

### Application Structure



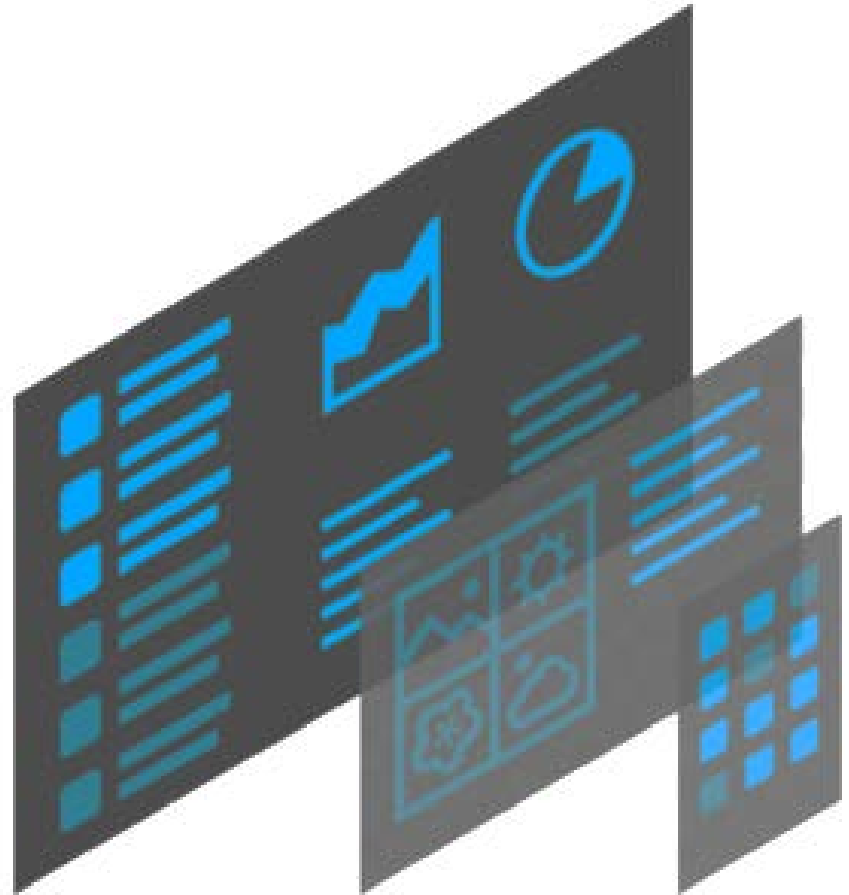
# NSight

## What it does

NSight is based on Sapling Data's software development suite.

It provides a collaborative information management and analysis platform to assist clients with collecting, enriching, analyzing and manipulating public and private data sets.

## How it works



# RavelLaw

## What it does

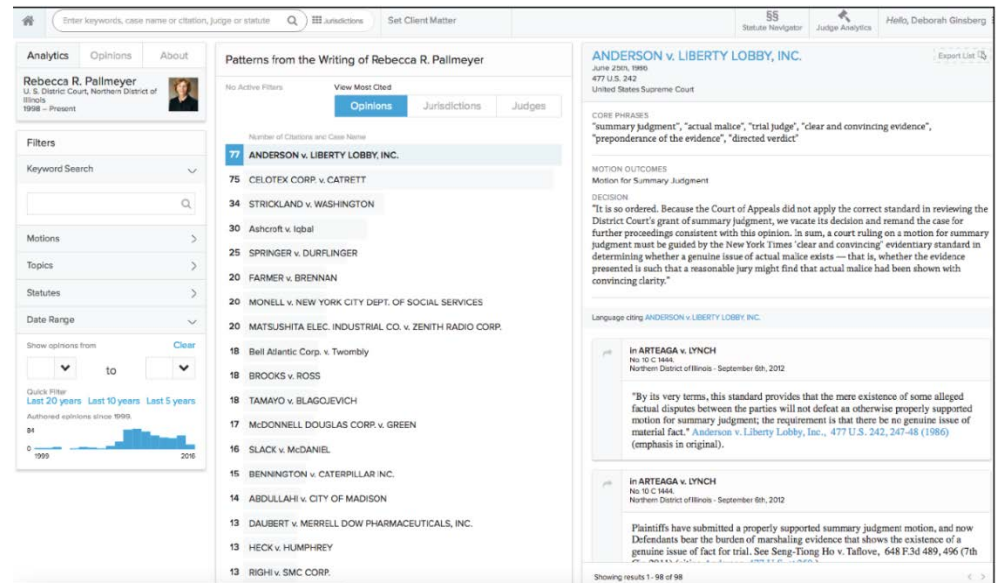
Ravel Law is a legal search, analytics, and visualization platform.

Ravel enables lawyers to find, contextualize, and interpret information that turns legal data into legal insights.

At this time, the platform offers judge and case analytics and search visualization.

RavelLaw was recently acquired by LexisNexis

## How it works



# Ross

## What it does

ROSS is built upon Watson, IBM's cognitive computer and mines facts and conclusions from any given number of unstructured data in form of text documents within seconds.

ROSS also monitors the law around the clock to notify users of new court decisions that can affect a case. The program continually learns from the lawyers who use it to bring back better results each time.

Currently, Ross is only available in the area of bankruptcy law but the company is working on expanding its offering's to other practice areas.

## How it works



# Conclusion



# Is The Concern Artificial Intelligence — Or Autonomy?



*Getty Images/Stockphoto*



# Sources

## ***Preparing for artificial intelligence in the legal profession***

<https://www.lexisnexis.com/lexis-practice-advisor/the-journal/b/lpa/archive/2017/06/07/preparing-for-artificial-intelligence-in-the-legal-profession.aspx>

## ***A.I. Is Doing Legal Work. But It Won't Replace Lawyers, Yet.***

[https://www.nytimes.com/2017/03/19/technology/lawyers-artificial-intelligence.html?\\_r=1](https://www.nytimes.com/2017/03/19/technology/lawyers-artificial-intelligence.html?_r=1)

## ***Allen & Overy: An Old Firm With A New Strategy***

<https://www.forbes.com/sites/markcohen1/2017/04/10/allen-overy-an-old-firm-with-a-new-strategy/#5c9800547250>

## ***Fuse - Tech innovation space***

<http://www.allenoverly.com/advanceddelivery/fuse/Pages/default.aspx>

## ***This Silicon Valley start-up wants to replace lawyers with robots***

[https://www.washingtonpost.com/news/innovations/wp/2017/09/14/this-silicon-valley-startup-wants-to-replace-lawyers-with-robots/?utm\\_term=.1816f6fb8db3](https://www.washingtonpost.com/news/innovations/wp/2017/09/14/this-silicon-valley-startup-wants-to-replace-lawyers-with-robots/?utm_term=.1816f6fb8db3)

## ***JPMorgan Software Does in Seconds What Took Lawyers 360,000 Hours***

<https://www.bloomberg.com/news/articles/2017-02-28/jpmorgan-marshals-an-army-of-developers-to-automate-high-finance>

## ***Can Robots Be Lawyers? Computers, Lawyers, and the Practice of Law***

[https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2701092](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2701092)

## ***Harnessing automation for a future that works***

<https://www.mckinsey.com/global-themes/digital-disruption/harnessing-automation-for-a-future-that-works>

The logo consists of a stylized, upward-pointing chevron or mountain shape in a gold color, positioned to the left of the text.

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