

# The Augmented Lawyer

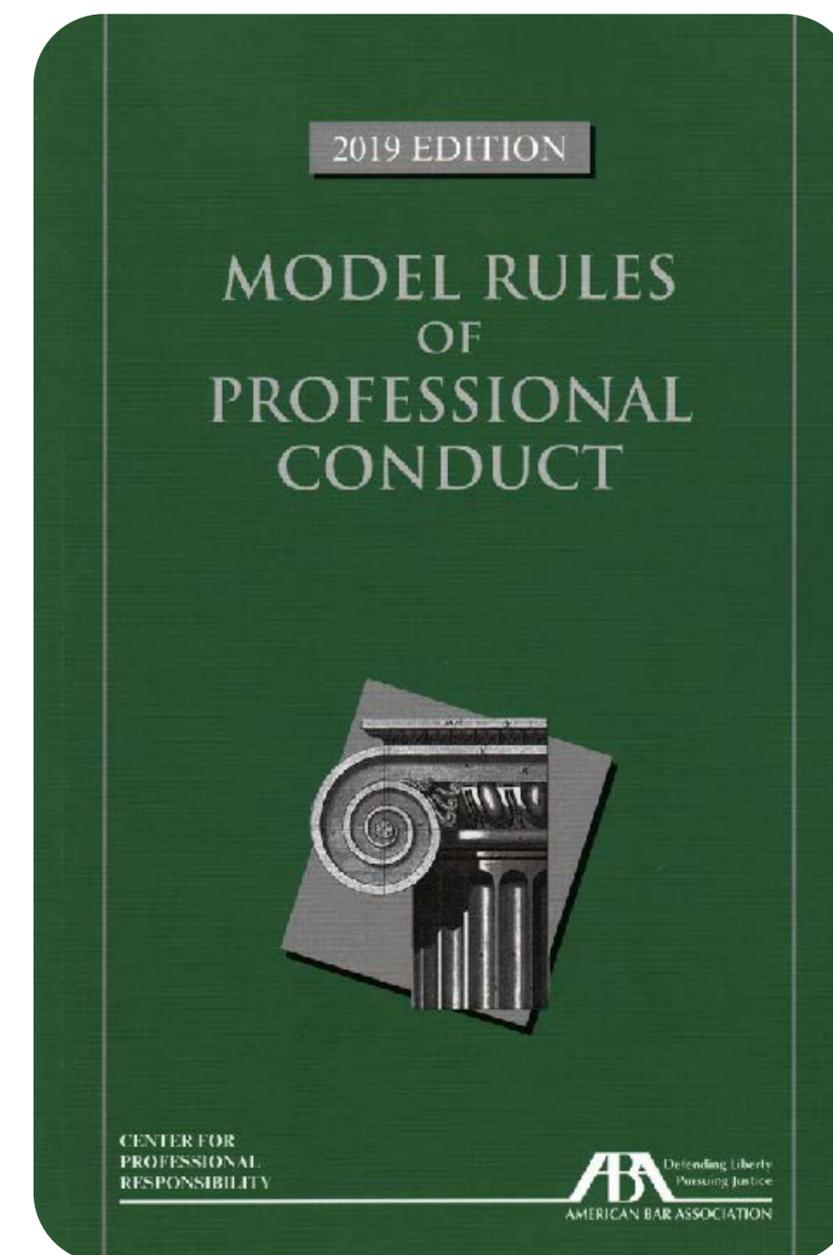
The Duty of Technology Competence  
in the Age of Artificial Intelligence

2020-12-04

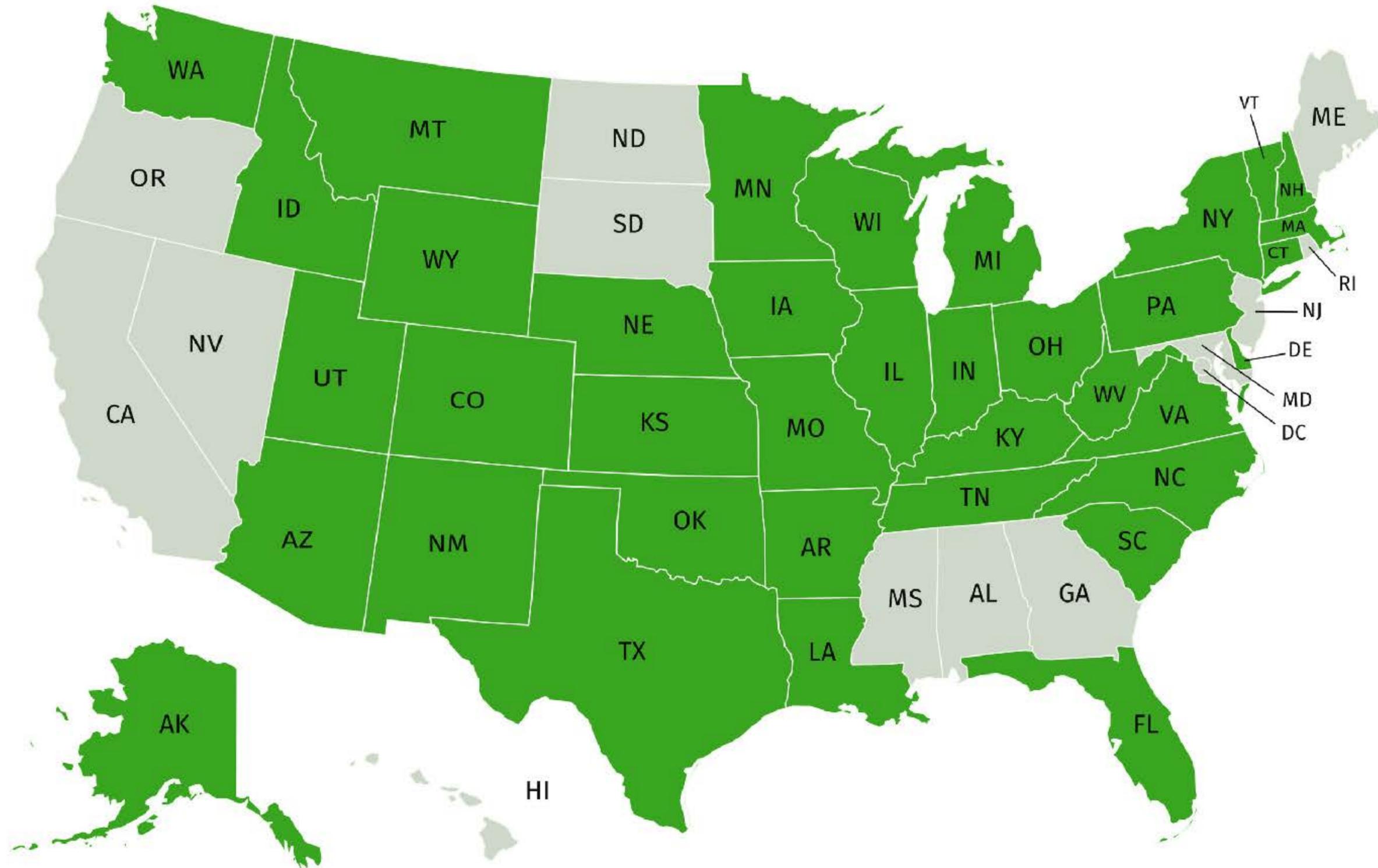
# ABA Model Rule 1.1: Competence

A lawyer shall provide competent representation to a client. Competent representation requires the legal knowledge, skill, thoroughness and preparation reasonably necessary for the representation.

[8] To maintain the requisite knowledge and skill, a lawyer should keep abreast of changes in the law and its practice, including the **benefits and risks associated with relevant technology**, engage in continuing study and education and comply with all continuing legal education requirements to which the lawyer is subject.



# 38 States (so far) have adopted the duty of technology competence



# Colorado Tweaked the Language in Comment 8

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## ABA Version

To maintain the requisite knowledge and skill, a lawyer should keep abreast of changes in the law and its practice, *including the benefits and risks associated with relevant technology*, engage in continuing study and education and comply with all continuing legal education requirements to which the lawyer is subject. *(emphasis added)*

## Colorado Version

To maintain the requisite knowledge and skill, a lawyer should keep abreast of changes in the law and its practice, *and changes in communications and other relevant technologies*, engage in continuing study and education, and comply with all continuing legal education requirements to which the lawyer is subject. *See Comments [18] and [19] to Rule 1.6. (emphasis added)*

# Tech Competence: What does it mean?

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- “The seemingly minor change to a Comment to Rule 1.1 captures an important shift in thinking about competent twenty-first century lawyering.”

—*Andrew Perlman, Suffolk Law Dean*

- Limited guidance in Colorado

- Colorado Office of Attorney Regulation Counsel
- Colorado Courts
- CBA Formal Ethics Opinion

Formal Opinions

Opinion 90

# 90

## PRESERVATION OF CLIENT CONFIDENCES IN VIEW OF MODERN COMMUNICATIONS TECHNOLOGY

Adopted November 14, 1992, revised July 2018.

The frequency of advances in technology notwithstanding, Colorado lawyers “should keep abreast of . . . changes in communications and other relevant technologies,” Colo. RPC 1.1 cmt. [8], so that they can make reasonable efforts to prevent inadvertent or unauthorized disclosure of, or unauthorized access to, confidential information as result of their use of communications technology. Lawyers have always had a duty to select modes and devices for communication that maintain the confidential nature of information related

# Tech Competence: What does it mean?

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## ABA Formal Ethics Opinion

### AMERICAN BAR ASSOCIATION

STANDING COMMITTEE ON ETHICS AND PROFESSIONAL RESPONSIBILITY

Formal Opinion 477

May 11, 2017

Securing Communication of Protected Client Information

**In practice:** State ethics regulators have applied the tech competence duty mainly to electronic discovery, electronic storage of information, social media, and the cloud. And particularly to electronic storage of law firm and client data.

—Lori D. Johnson, *Navigating Technology Competence in Transactional Practice*, 65 Vill. L. Rev. 159, 175 (2020).

# Lawyers must evolve with technology

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## **The Twenty-First Century Lawyer's Evolving Ethical Duty of Competence**

By Andrew Perlman

### **New Competencies for the Twenty-First Century Lawyer**

The advice to keep abreast of relevant technology is vague, and the Commission intended for it to be so. The Commission understood that a competent lawyer's skillset needs to evolve along with technology itself. After all, given the pace of change in the last twenty years, the specific skills lawyers will need in the decades ahead are difficult to imagine.<sup>1</sup> In the meantime, a few new competencies appear to be critical.

# From “Information Age” to “Algorithmic Society”

Society will move beyond the abundance of information that defined the Information Age to increasingly rely on algorithms that sort big data in the “Algorithmic Society.”

As lawyers increasingly rely on algorithms in the everyday practice of law, the legal profession must take active steps to ensure competent use of algorithms to temper the risks associated with their use. “[I]n chasing the amazing possibilities, the profession must not forget the fundamentals. In our race to use technology to be better, faster and cheaper, we must not forget that the law's effect will always [be] endured by humans. . . . [W]e cannot ignore the danger of a failure of competence.”

[C]ompetent lawyers must continuously monitor their use of a vendor and the corresponding algorithms to ensure that they use reasonable care when relying on the algorithm's results. We also know that a lawyer's lack of technological sophistication is no excuse, so the lawyer must at least have a basic understanding of the pitfalls associated with using algorithms to be able to vet the content.

## Beyond the Information Age: The Duty of Technology Competence in the Algorithmic Society

*South Carolina Law Review, Vol. 69, 2018*

24 Pages • Posted: 9 Jan 2018 • Last revised: 11 Jan 2018

[Jamie Baker](#)

Texas Tech University School of Law

Date Written: December 15, 2017

### **Abstract**

While law has generally been slow to adapt to technological change, the ABA Model Rules of Professional Conduct amended the Duty of Competence language to include a Duty of Technology Competence. This duty requires lawyers to keep abreast of “changes in the law and its practice, including the benefits and risks associated with relevant technology.” A majority of states have now adopted this new Duty of Technology Competence, but there is little guidance on its current reach. The guidance documents mainly discuss the duty in terms of eDiscovery, electronic storage, social media, and the cloud. As society moves beyond the Information Age to the Algorithmic Society, this duty should extend to the competent use of artificial intelligence and algorithms in law. As such, it behooves the legal academy to prepare lawyers for ethical practice in this brave new world.

**Keywords:** algorithms, artificial intelligence, duty of technology competence, ABA model rules, lawyers, ethics, legal research

**Suggested Citation:**

Baker, Jamie, Beyond the Information Age: The Duty of Technology Competence in the Algorithmic Society (December 15, 2017). South Carolina Law Review, Vol. 69, 2018, Available at SSRN: <https://ssrn.com/abstract=3097250>

# Technology Competence Comes in Many Flavors

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- Practice management
  - Research
  - Analysis
  - Composition/drafting
  - Filing
- Data security
  - (Applies to pretty much everything)
- Handling client data
  - Vendor management
  - Investigation
  - Review management
  - Productions / filings / presentations

# Why is technology competence important

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- “Technology is playing an ever more important role, and lawyers who fail to keep abreast of new developments face a heightened risk of discipline or malpractice as well as formidable new challenges in an increasingly crowded and competitive legal marketplace.” Andrew Perlman, Dean, Suffolk Law School
- Risks
  - Inadvertent disclosure
  - Data loss
  - Other prejudice to client
- Consequences
  - Sanctions (exclusion of evidence, attorneys’ fees)
  - Losing (matter, business, opportunities)
  - Malpractice



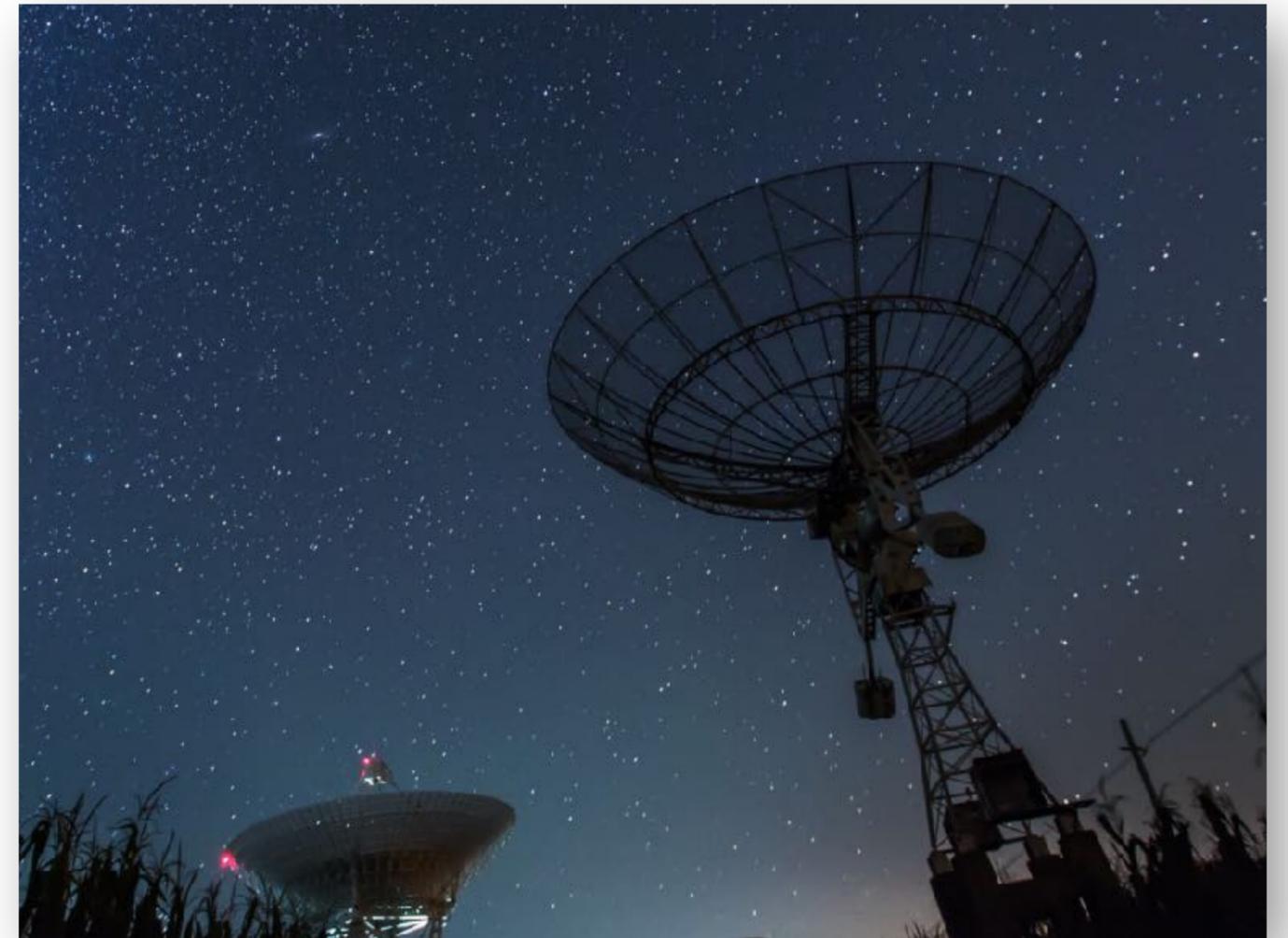
# Case Law



# Case Study: Russian Broadcasters

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- Russian Broadcasters alleged Infomir illegally intercepted and distributed their content in the US.
- Plaintiff's counsel relied on affidavit describing the broadcasters' use of certain software to trace the illegally obtained content, but failed to produce underlying data and were negligent in using the software.
- “The Court accepts that Wireshark is less familiar to the general public (and most lawyers) than commonly-used word processing and email programs. But it was ... [plaintiffs' counsel's] responsibility – not [defendant's] or the Court's – to understand the technology well enough to know where and how to preserve, locate, and produce discoverable ESI created by or saved within that program. See N.Y. Rules of Prof'l Conduct, R. 1.1 (“Competence”), cmt. 8.



*Joint Stock Company Channel One Russia Worldwide v. Infomir LLC*, 16-CV-1318 (GBD) (BCM), 2019 WL 4727537 (S.D.N.Y. Sept. 26, 2019).

# Case Study: The Payday Lender

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- Gloria James sued a payday lender for unconscionable loan practices after she defaulted on a high-interest loan.
- Lender violated two discovery orders directing it to extract from its IT systems and produce accurate APR data to plaintiff.
- Among counsel's shifting explanations for the lender's failure to do so: software problems and technological illiteracy:

“I have to confess to this Court, I am not computer literate. I have not found presence in the cybernetic revolution. I need a secretary to help me turn on the computer. This was out of my bailiwick.”



*James v. Nat'l Fin. LLC*, C.A. No. 8931-VCL, 2014 WL 6845560, 2014 WL 6845560 (Del. Ch. Dec. 5, 2014).

# Case Study: The Payday Lender

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*James v. Nat'l Fin. LLC*, C.A. No. 8931-VCL, 2014 WL 6845560, 2014 WL 6845560 (Del. Ch. Dec. 5, 2014).

- “Professed technological incompetence is not an excuse for discovery misconduct.”
- “Effective March 1, 2013, the Delaware Supreme Court amended Comment 8 to Rule 1.1 of the Delaware Lawyers’ Rules of Professional Conduct, which addresses competence, to include maintaining technological competence.”
- “Deliberate ignorance of technology is inexcusable...If a lawyer cannot master the technology suitable for that lawyer’s practice, the lawyer should either hire tech-savvy lawyers tasked with responsibility to keep current, or hire an outside technology consultant who understands the practice of law and associated ethical constraints.”
  - Judith L. Maute, *Facing 21st Century Realities*, 32 Miss. C.L. Rev. 345, 369 (2013).
- Established for trial that APRs were inaccurate (under TILA lenders must disclose accurate rates); fees award



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THE *NEW YORK TIMES* BESTSELLER

# THE **CHECKLIST** MANIFESTO

HOW TO GET THINGS RIGHT



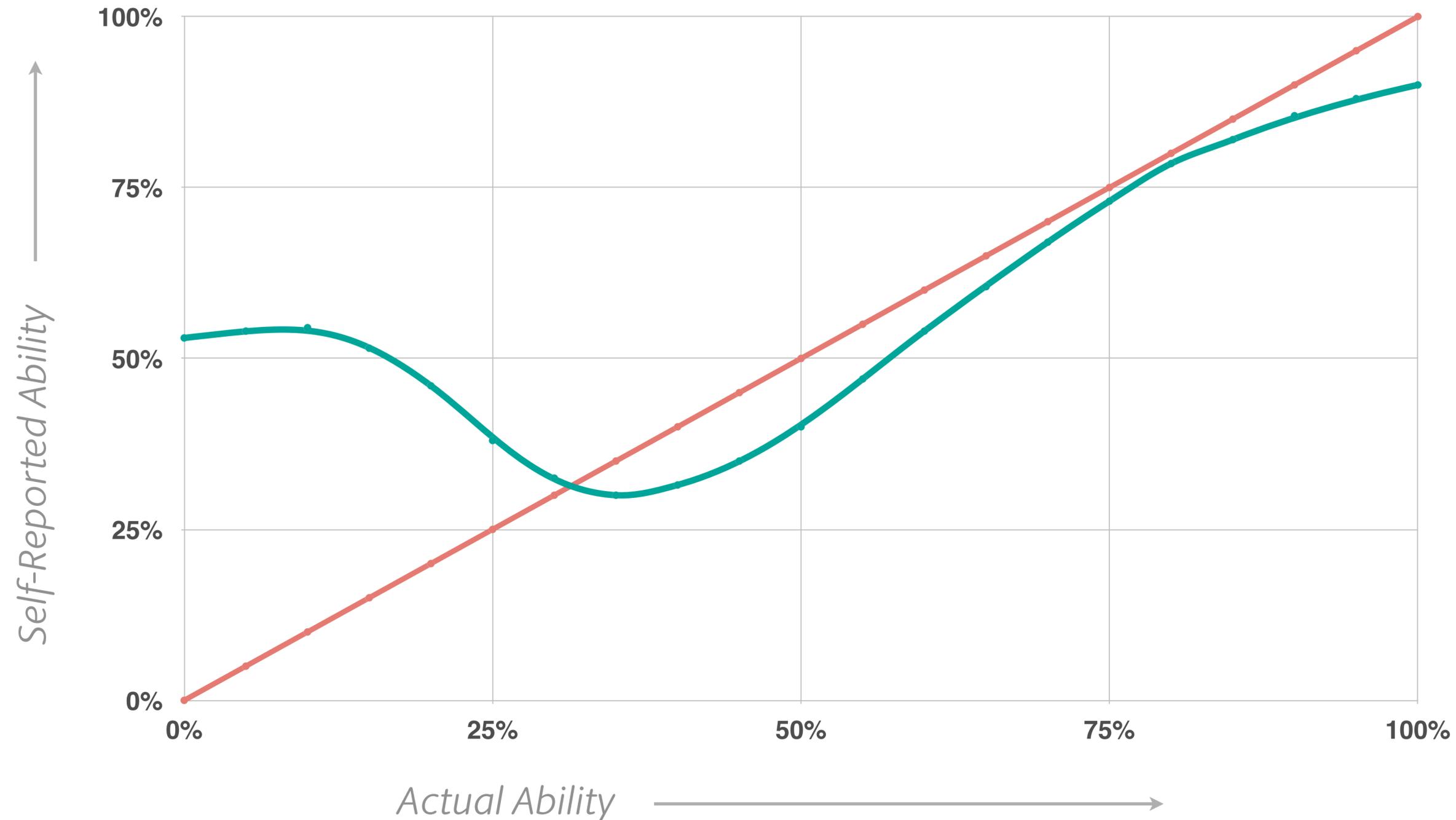
PICADOR

# ATUL GAWANDE

BESTSELLING AUTHOR OF *BETTER* AND *COMPLICATIONS*

# The Dunning-Kruger Effect

A Catch-22: You need skill in order to recognize your lack of skill

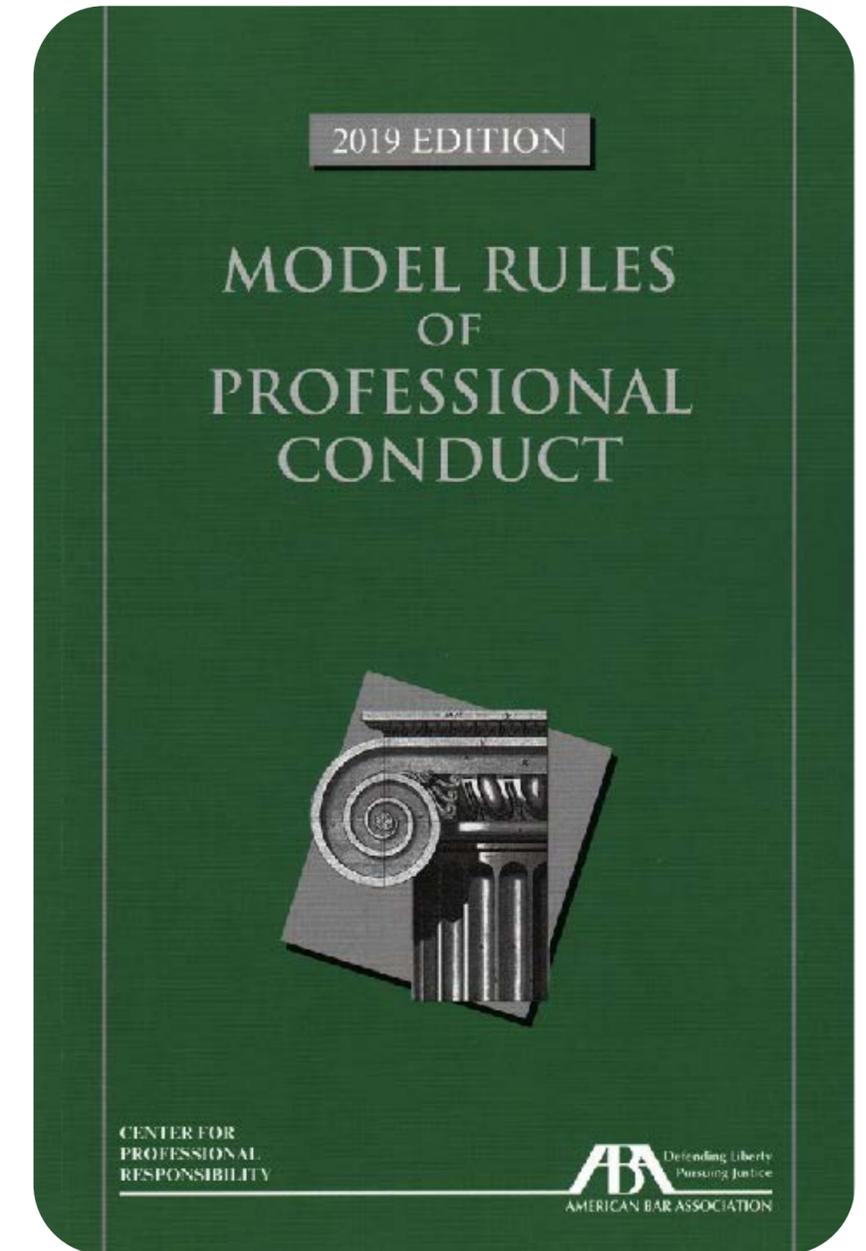


# ABA Model Rule 1.1: Competence

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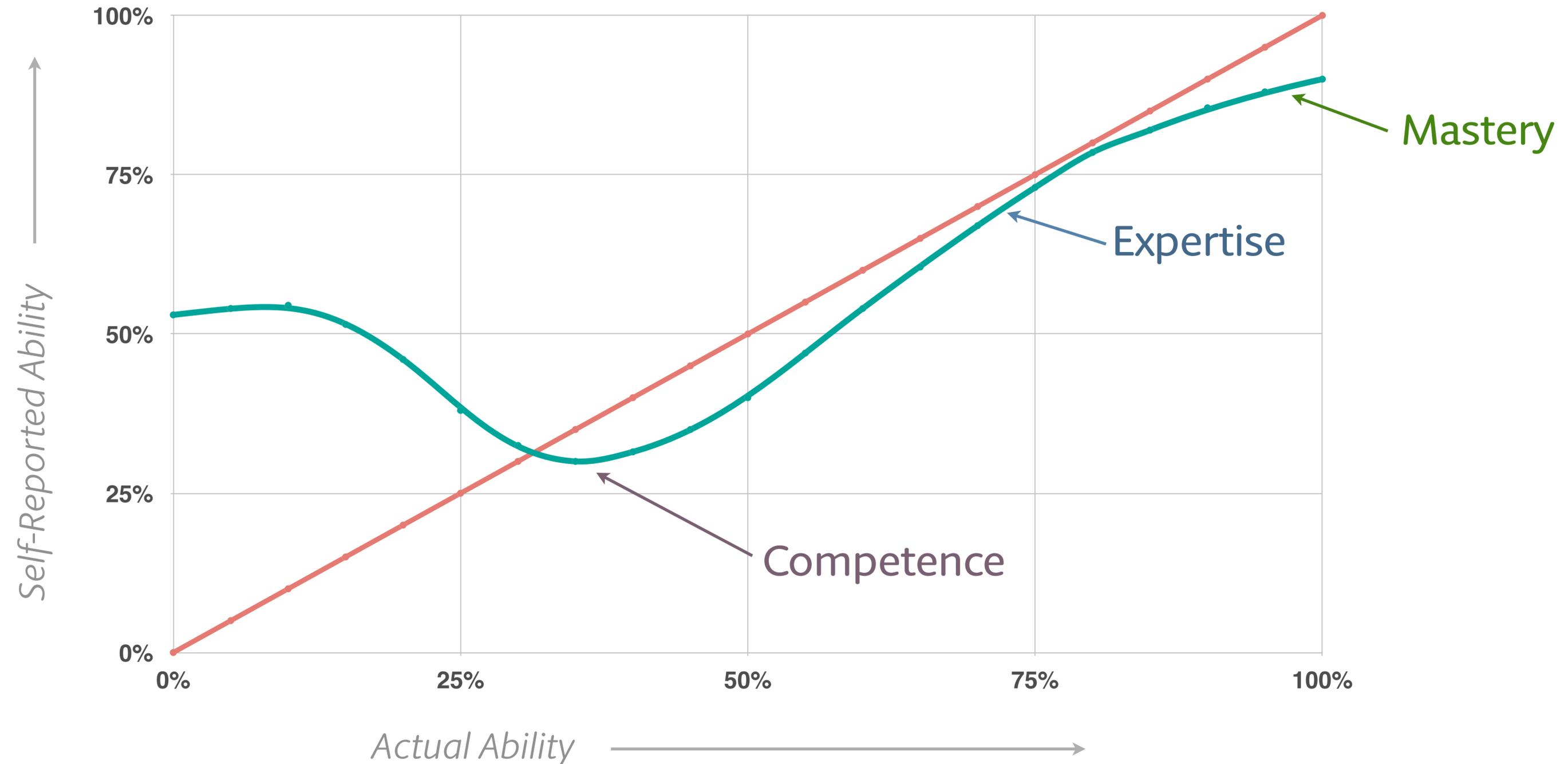
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# The Dunning-Kruger Effect

A Catch-22: You need skill in order to recognize your lack of skill





Welcome,  
Robot Overlords!

*If it was written in Python, it's probably machine learning.*

*If it was written in PowerPoint, it's probably "artificial intelligence."*

```
*(d++) = y + n * positions[i][j][2];
*(d++) = z + n * positions[i][j][2];
*(d++) = normals[i][0];
*(d++) = normals[i][1];
*(d++) = normals[i][2];
*(d++) = du + (uvs[i][j][0] ? b : a);
*(d++) = dv + (uvs[i][j][1] ? b : a);
*(d++) = ao[i][j];
*(d++) = light[i][j];
}
}

void make_cube(
float *data, float ao[6][4], float light[6][4],
int left, int right, int top, int bottom, int front, int back,
float x, float y, float z, float n, int w)
{
int wleft = blocks[w][0];
int wright = blocks[w][1];
int wtop = blocks[w][2];
int wbottom = blocks[w][3];
int wfront = blocks[w][4];
int wback = blocks[w][5];
make_cube_faces(
data, ao, light,
left, right, top, bottom, front, back,
wleft, wright, wtop, wbottom, wfront, wback,
x, y, z, n);
}

plant(
*data, float ao, float light,
float px, float py, float pz, float px2, float py2, float pz2);

static const float positions[10][3] = {
{{ 0, -1, -1},
{{ 0, -1, 1},
{{ -1, -1, 0},
{{ -1, 1, 0},
};
```

# “Artificial Intelligence”

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A broad, umbrella term with a lot of history

1. Neural Networks
2. (*“AI Winter”*)
3. Expert Systems
4. (*“Another AI Winter”*)
5. Machine Learning
6. Combinations and variations
7. (TBD)

# Machine Learning

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- Unsupervised
- Supervised
- Semi-supervised
- Deep
- Other combinations of techniques

+ Create Station

1:13      -1:21

**These Arms of Mine**  
by Otis Redding  
on Otis Redding: Love Songs 

[Now Playing](#) [Music Feed](#) [My Profile](#)

Shuffle

**Ray Charles Radio**  
add variety | options >



**Georgia On My Mind**  
by Ray Charles  
on Singular Genius: The Complete ABC Singles

[Publish](#) [Share...](#) [Buy](#)

**About Ray Charles**  
Ray Charles was the musician most responsible for developing soul music. Singers like Sam Cooke and Jackie Wilson also did a great deal to pioneer the form, but Charles did even more to devise a new form of black full bio

**Similar Artists**  
Ray Charles & The Count Basie Orchestra  
Otis Redding  
Bill Withers  
Etta James

Date | A - Z

**IN THE HOME**

# Basic Workflow for Investigative Search

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## 1. Exploit

*Start with what you know to search for, grab any low-hanging fruit, look for known documents or use known key terms*

## 2. Expand

*Build out from your initial results with clustering, query expansion, near-duplicate analysis, supervised machine learning (TAR)*

## 3. Explore

*Diversity sampling, data visualization, outlier and anomaly detection*

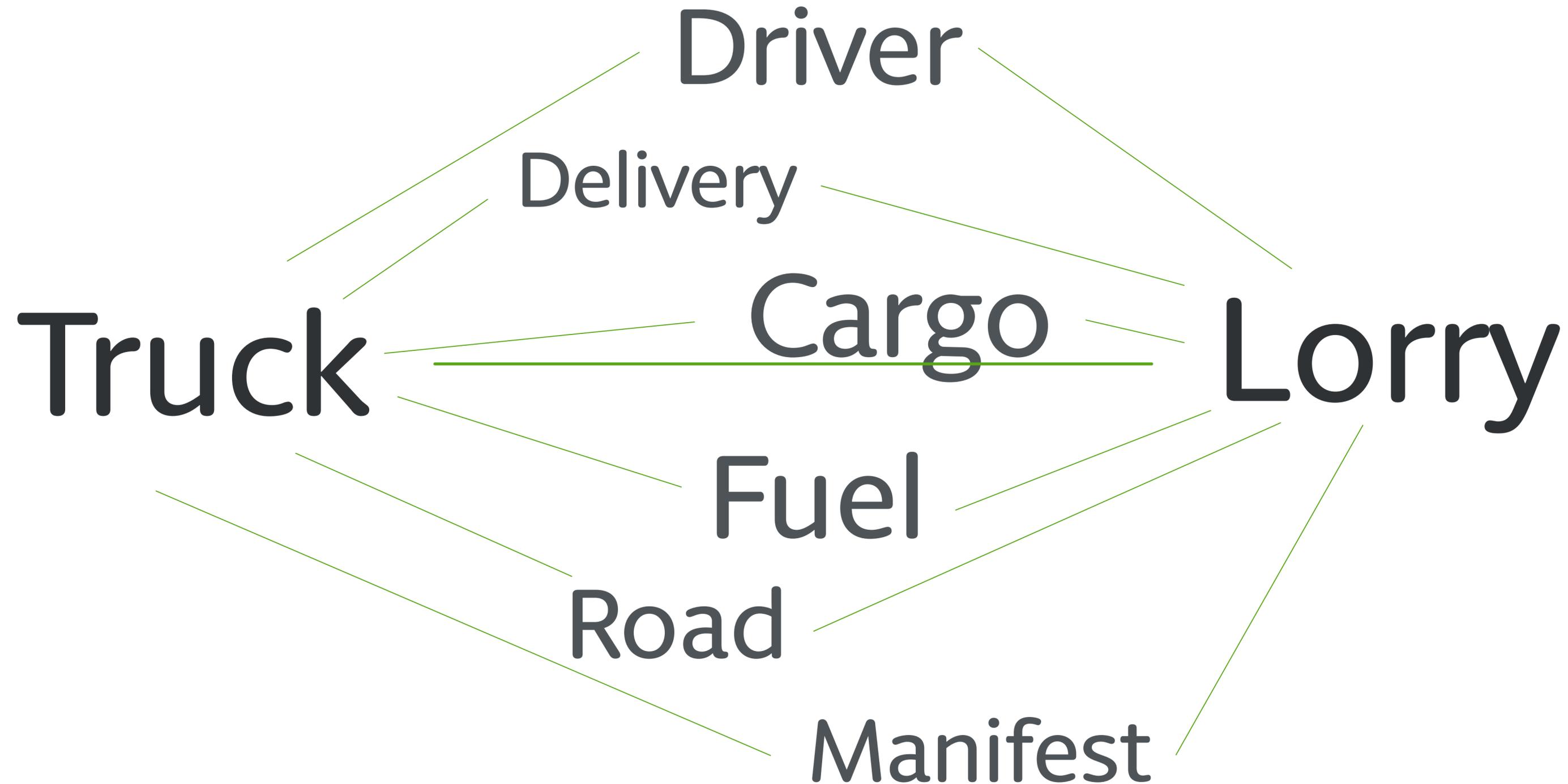




# Latent Semantic Analysis

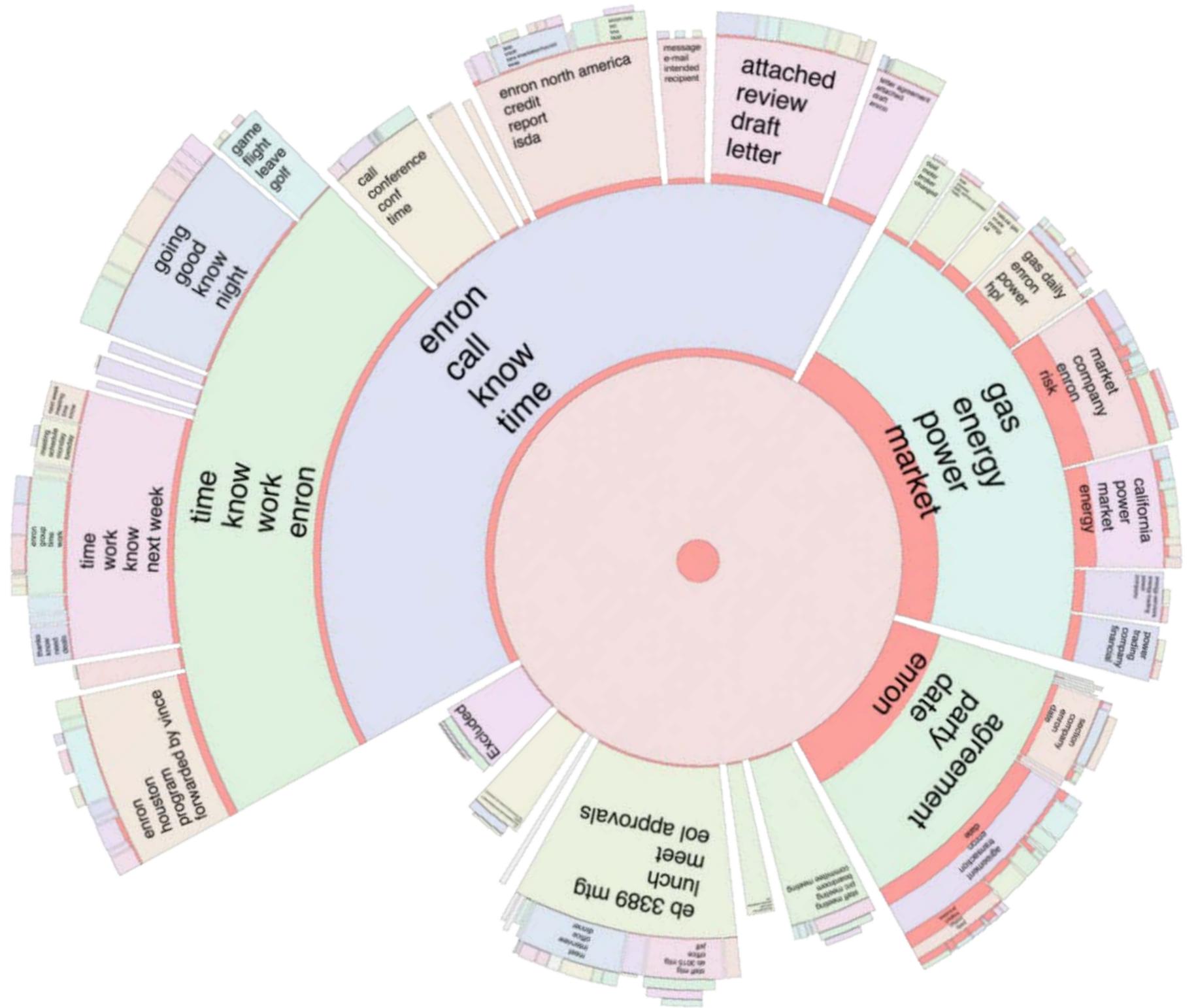
# Latent Semantic Analysis

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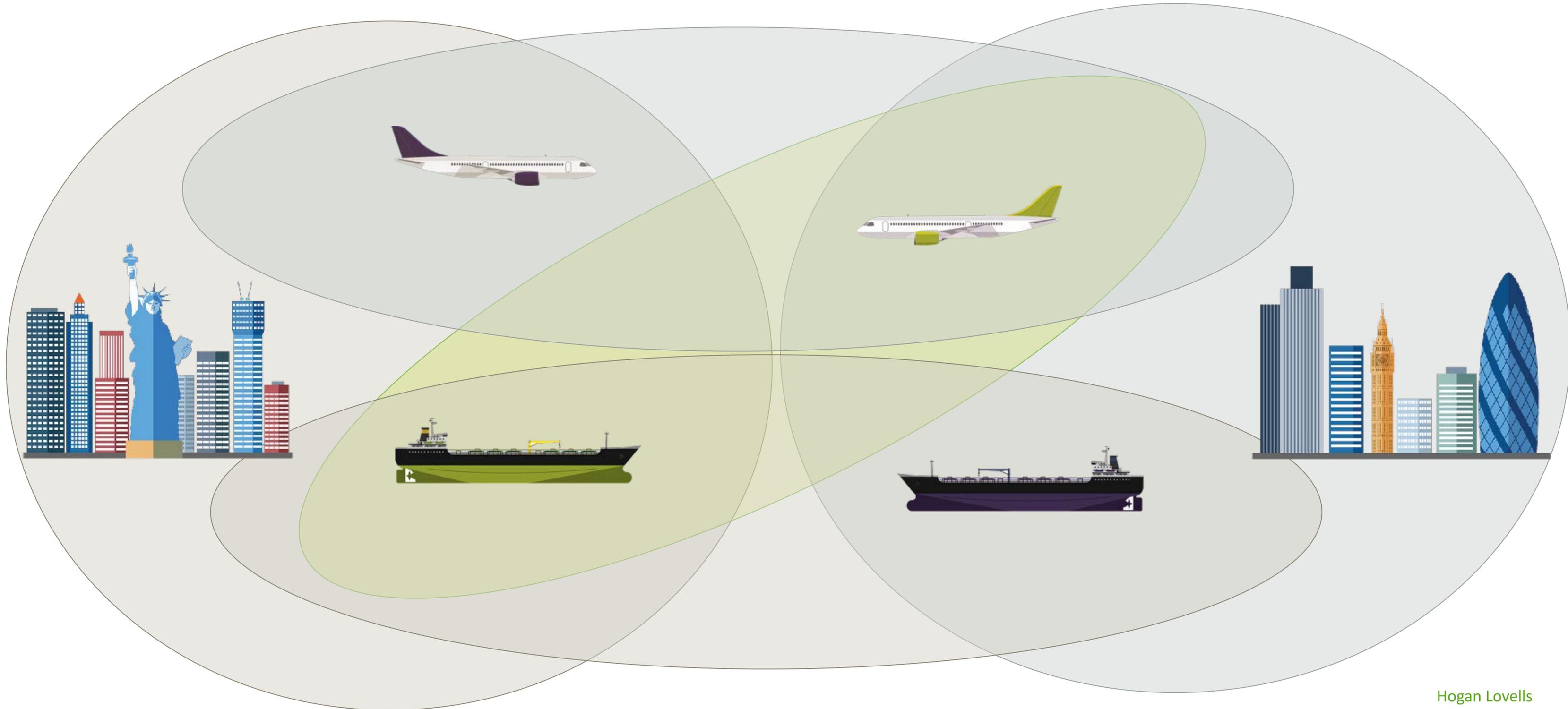
# Clustering

Unsupervised learning tool  
to group similar things together



# Clustering

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# Sentiment Analysis

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A form of unsupervised, natural language processing (NLP)

**# @ % !**

Find the communications with the strongest emotional content:

- Anxiety
- Anger
- Hatred
- *etc.*

# NexLP / Reveal: Off-the-shelf machine learning models

<b>Privileged Content</b> Publisher: NexLP Jun 17, 2020 / V1 COSMIC model Identifies documents that contain privileged content. This includes conversations involving requests for legal advice, legal advice itself, and prepar... <a href="#">show more</a> <a href="#">Request model</a>	<b>Asking for Advice</b> Publisher: NexLP Jun 17, 2020 / V1 COSMIC model Identifies communications in which the participants solicit or share advice. When used with other models, this model adds the context of advice with o... <a href="#">show more</a> <a href="#">Request model</a>	<b>Advertisements &amp; Promotions</b> Publisher: NexLP Jun 17, 2020 / V1 COSMIC model Identifies communications that can include advertisements, newsletters, and other forms of promotional materia . This model may be used to filter out ... <a href="#">show more</a> <a href="#">Request model</a>	<b>Gifts &amp; Entertainment</b> Publisher: NexLP Jun 17, 2020 / V1 COSMIC model Identifies communications that discuss gifts and forms of entertainment that may have a monetary value associated with it, i.e. sporting events, theat... <a href="#">show more</a> <a href="#">Request model</a>
<b>Document Management</b> Publisher: NexLP Jun 17, 2020 / V1 COSMIC model Identifies communications that discuss modifying or updating documents. This model can be used with NexLP's Privileged Content model. <a href="#">Request model</a>	<b>Contracts</b> Publisher: NexLP Jun 17, 2020 / V1 COSMIC model Identifies contractual agreements in the form of loose files, attached documents, or cut-and-pasted excerpts of contracts embedded in emails. <a href="#">Request model</a>	<b>Sexually Explicit Comments</b> Publisher: NexLP Apr 24, 2020 / V1.1 COSMIC model Identifies conversations that include descriptive language related to sexual acts or inappropriate behavior. These conversations may be general in nat... <a href="#">show more</a> <a href="#">Request model</a>	<b>Comments on Appearance</b> Publisher: NexLP Apr 24, 2020 / V1.1 COSMIC model Identifies conversations related to a person's attire or physical attributes. These conversations may have positive or negative connotations, and may ... <a href="#">show more</a> <a href="#">Request model</a>
<b>Employment &amp; Career Adv...</b> Publisher: NexLP Apr 24, 2020 / V1.1 COSMIC model Identifies conversations about promotions, job opportunities, and workplace performance. <a href="#">Request model</a>	<b>Bullying &amp; Toxic Behavior</b> Publisher: NexLP Feb 20, 2020 / V1 COSMIC model Identifies aggressive language with the intent to cause someone mental harm or shame. <a href="#">Request model</a>	<b>Hate &amp; Discrimination</b> Publisher: NexLP Feb 20, 2020 / V1 COSMIC model Identifies communications of animosity or disparagement toward an individual or a group due to their race, color, national origin, sex, disability, re... <a href="#">show more</a> <a href="#">Request model</a>	<b>Insulting &amp; Vulgar Behavior</b> Publisher: NexLP Feb 20, 2020 / V1 COSMIC model Identifies communication having offensive language. <a href="#">Request model</a>
<b>Threatening Behavior</b> Publisher: NexLP Feb 20, 2020 / V1 COSMIC model <a href="#">Request model</a>	<b>Pricing &amp; Fees</b> Publisher: NexLP Feb 20, 2020 / V1 COSMIC model <a href="#">Request model</a>	<b>Out of Office</b> Publisher: NexLP Oct 3, 2019 / V1 COSMIC model <a href="#">Request model</a>	<b>Sports News</b> Publisher: NexLP Oct 3, 2019 / V1 COSMIC model <a href="#">Request model</a>



# Unsupervised ML: Mass Analysis

# Unsupervised Learning Text Comparison Tool

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- Internally-developed tool that identifies and displays best contextual paragraph matches from a set of 1000s of documents
  - In other words, pairs each paragraph (or sentence) of documents with the best match found within an existing set of documents
- Unsupervised textual analysis
  - Can leverage publicly-available documents and clauses to “feed” the algorithm
- Does not rely on specific keywords or require supervised training
  - Relies on mathematical comparisons of the prevalence, similarity, and distance between characters and words in a sentence or paragraph
- Nearly instantaneous identification of:
  - Slightly modified claims in multiple complaints in mass litigation
  - Contextually-similar contract clause language among contracts

# Text Analysis: Find matching blocks of text and try to expand

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of that war.

— 67% —

— 100% —

— 92% —

— 100% —

— 100% —

— 100% —

— 93% —

— 100% —

— 100% —

— 100% —

— 19% —

— 88% —

— 100% —

— 100% —

— 0% —

— 0% —

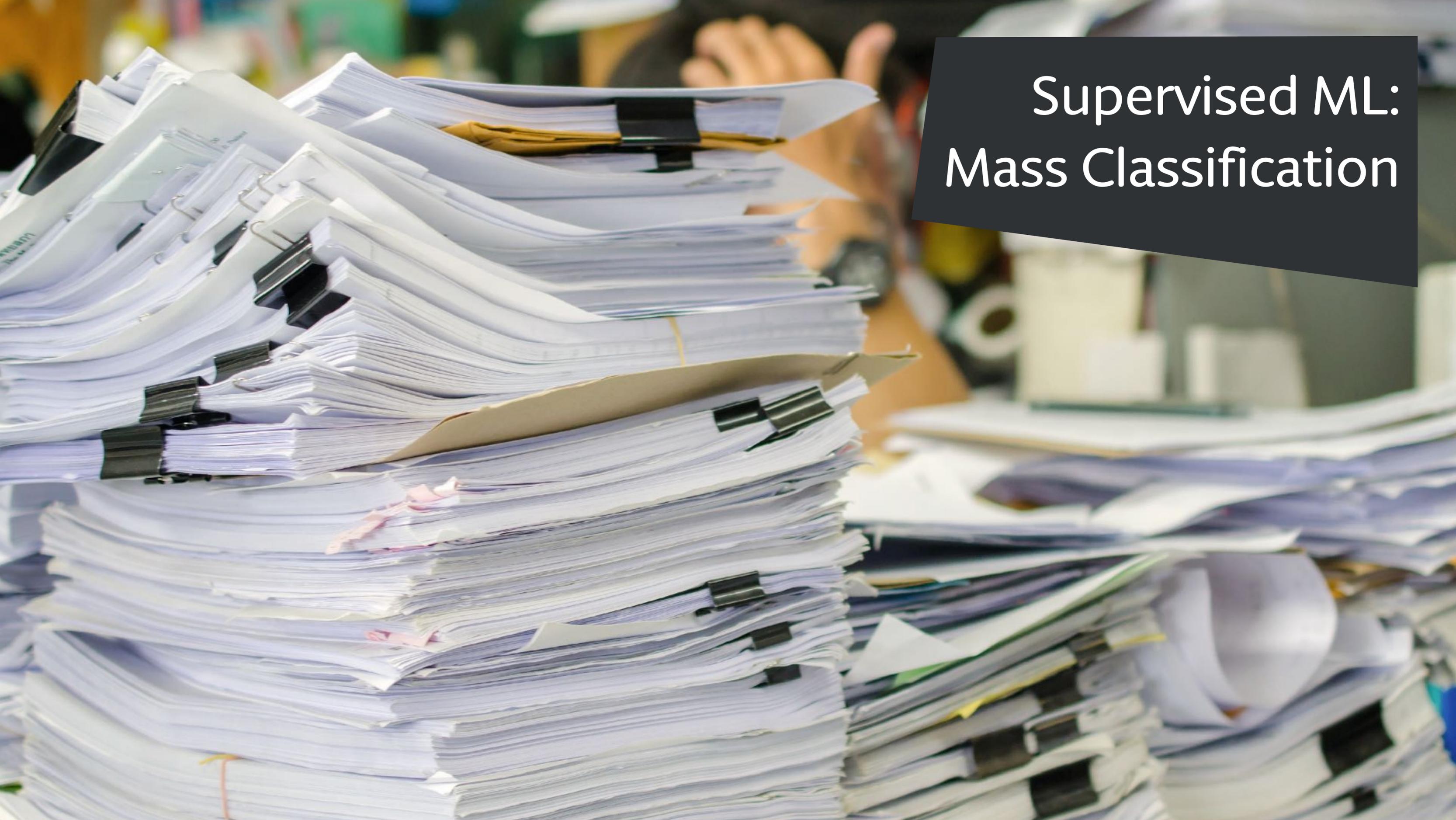
of that war.

# Text Presentation: Do something useful with the matches

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Now we are engaged in a great civil war, testing whether that nation, or any nation so conceived, and so dedicated, can long endure. We are met on a great battle-field of that war. We have come to dedicate a portion of it, as a final resting place for those who **died** here, that **the** nation might live. ~~This we may, in all propriety do.~~ But, in a larger sense, we can not dedicate—we can not consecrate—we can not hallow, this ground—The brave men, living and dead, who struggled here, have **hallowed** it, far above our poor power to add or detract. The world will little note, nor long remember what we say here; **while it** can never forget what they did here.

Now we are engaged in a great civil war, testing whether that nation, or any nation, so conceived, and so dedicated, can long endure. We are met here on a great battlefield of that war. We have come to dedicate a portion of it as a final resting place for those who here gave their lives that that nation might live. It is altogether fitting and proper that we should do this. But in a larger sense we can not dedicate—we can not consecrate—we can not hallow this ground. The brave men, living and dead, who struggled, here, have consecrated it far above our poor power to add or detract. The world will little note, nor long remember, what we say here, but can never forget what they did here.



# Supervised ML: Mass Classification

# What Is Technology Assisted Review?

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“By computer-assisted coding, I mean tools that use sophisticated algorithms to enable the computer to determine relevance, based on interaction with a human reviewer.”

*Da Silva Moore v. Publicis Groupe (S.D.N.Y. 2012)*

A process

- for prioritizing or coding
- a collection of documents
- using a computerized system
- that harnesses human judgments
- of one or more subject matter expert(s) ("SMEs")
- on a smaller set of documents
- and then extrapolates those judgments to the remaining document collection
- on richness, document types, document diversity, etc.

*Maura R. Grossman & Gordon V. Cormack, The Grossman-Cormack Glossary of Technology-Assisted Review, 2013 Fed. Cts. L. Rev. 7 (January 2013)*

# It's All About That Math

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Logistic Regression

Support Vector Machines

Bayesian Inference Networks

K-Nearest Neighbor

*Latent Semantic (Concept)*

“I may be less interested in the science behind the ‘black box’ than in whether it produced responsive documents with reasonably high recall and high precision.”

– Peck, M.J. (S.D.N.Y.)



# Three Major Components of TAR Systems

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## 1. Feature Selection

*E.g.*, Latent semantic whatever, words, n-grams, metadata

## 2. Algorithm

*E.g.*, SVM, k-nearest neighbor, Bayesian inference, logistic regression

## 3. Process (Workflow)

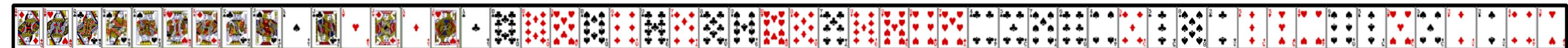
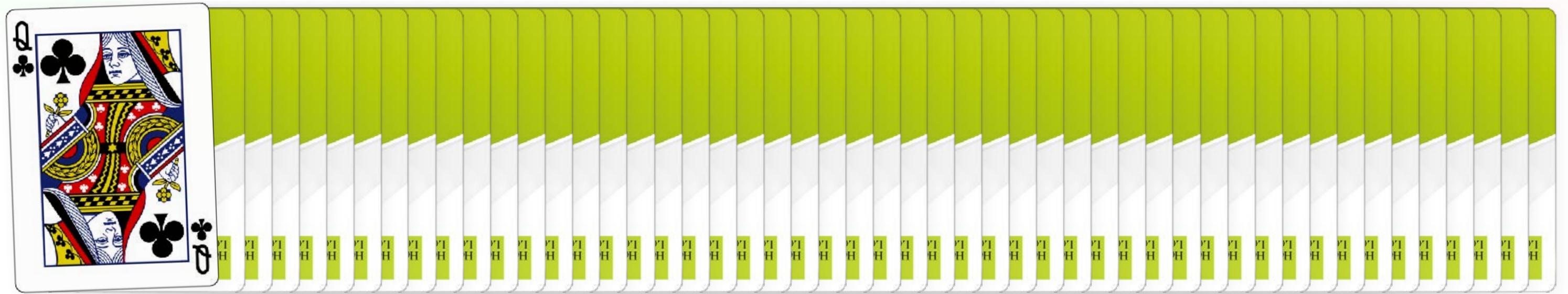
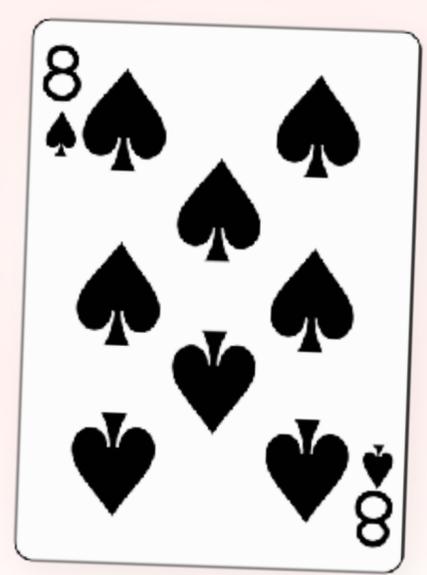
*E.g.*, Continuous Active Learning



# TAR 2.0

Continuous Active Learning





# Ranking a Document Set

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*Any Trait*



1...

... $n$

# Cut Point Review

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*Responsiveness*



Produce

Discard

Cut Point

# Prioritized Review

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*Responsiveness*



Order of review

Stopping Point

# Privilege Review

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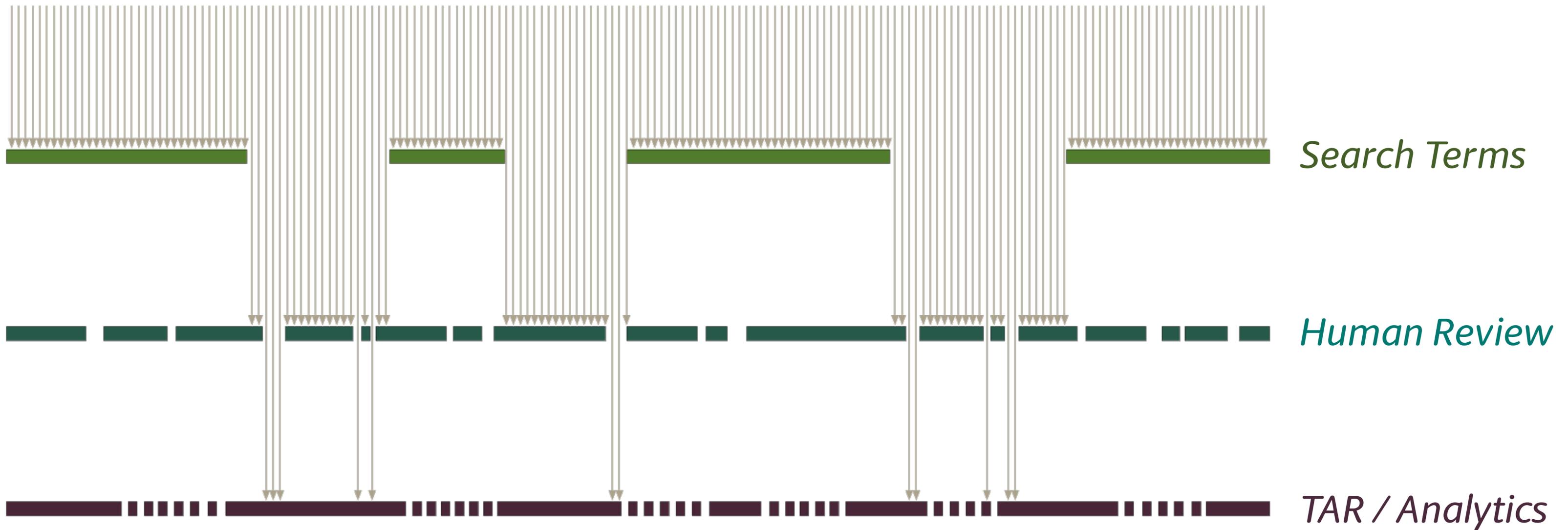
*Privilege*



# Stacking Techniques to Maximize Recall

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Different techniques make different kinds of errors



# Two-Tailed Privilege Review

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*Privilege*



Priv Logging



2nd Pass Priv

# Opposing Party Productions

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*“Hot”*



# Issue Coding

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*Infringement*



# Issue Coding

---

*Infringement*



*Willfulness*



# Issue Coding

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*Infringement*



*Willfulness*



*Damages*



# Issue Coding

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*Infringement*



*Willfulness*



*Damages*

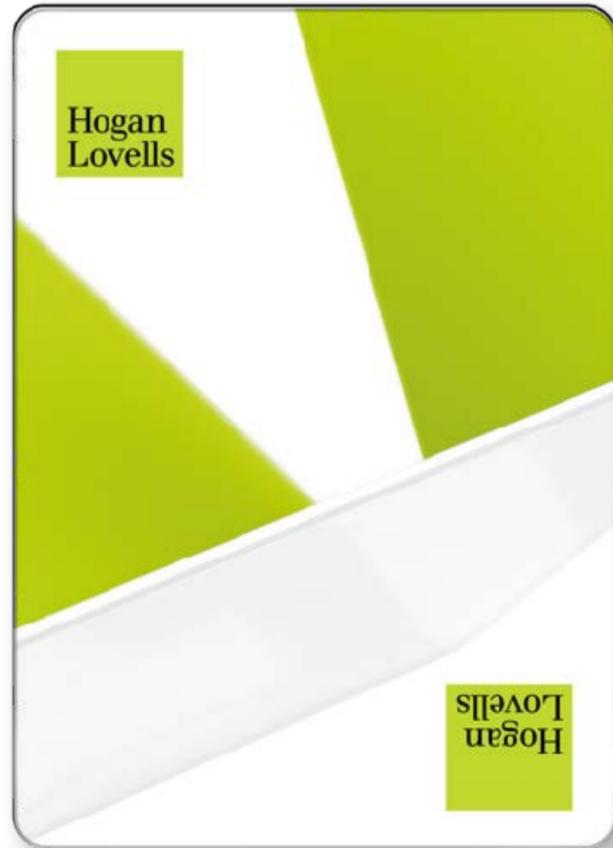
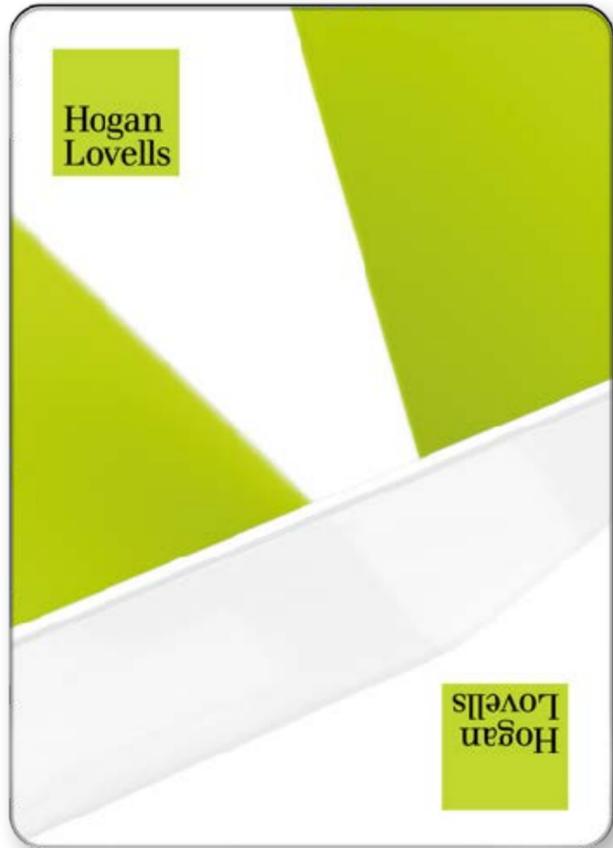


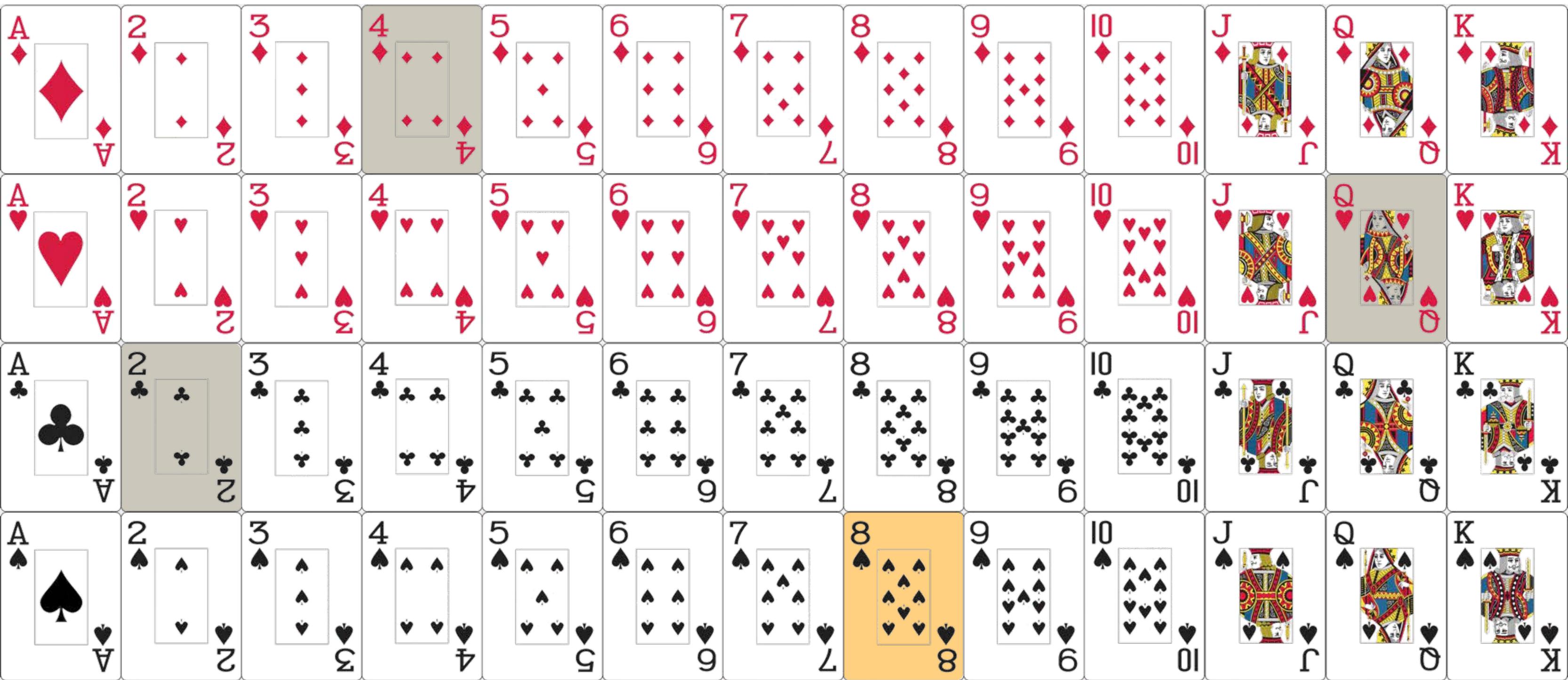
# Exploration: Diversity Sampling



# Diversity Sampling

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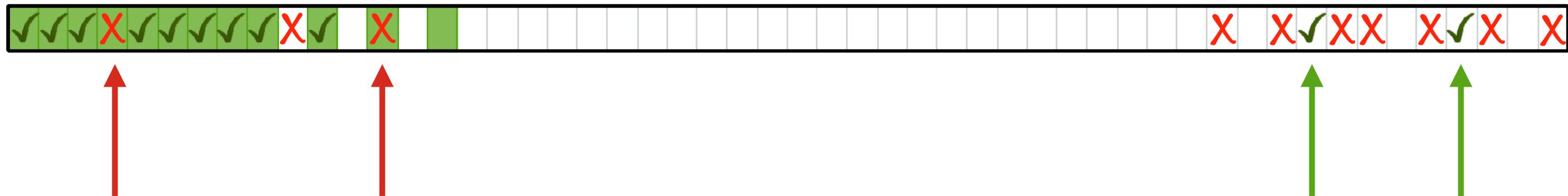




Quality Control

# TAR-Based Quality Control

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# Our Primary Platforms

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- Investigations
- Early case assessment
- Query expansion
- Hierarchical clustering
- Data visualization
- Concept search
- Communications network analysis
- Supervised machine learning (TAR)



- Investigations
- Sentiment analysis
- Relationship analysis
- Narrative analysis
- Data visualization
- Concept Search
- Communications network analysis
- Supervised machine learning (TAR)



- Industry-standard review platform
- Multiple search techniques
- Structured analytics
- Conceptual analytics
- Redactions
- Productions
- Reporting
- Supervised machine learning (TAR)



# But Wait, There's More:

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- Mobile devices
- Social media
- Structured data analysis
- Data visualization
- Reusable machine learning models
- Image analysis
- Voice to text, phoneme search
- Video analysis

```
..._object = mirror_ob
... == "MIRROR_X":
..._mod.use_x = True
..._mod.use_y = False
..._mod.use_z = False
... == "MIRROR_Y":
..._mod.use_x = False
..._mod.use_y = True
..._mod.use_z = False
... == "MIRROR_Z":
..._mod.use_x = False
..._mod.use_y = False
..._mod.use_z = True

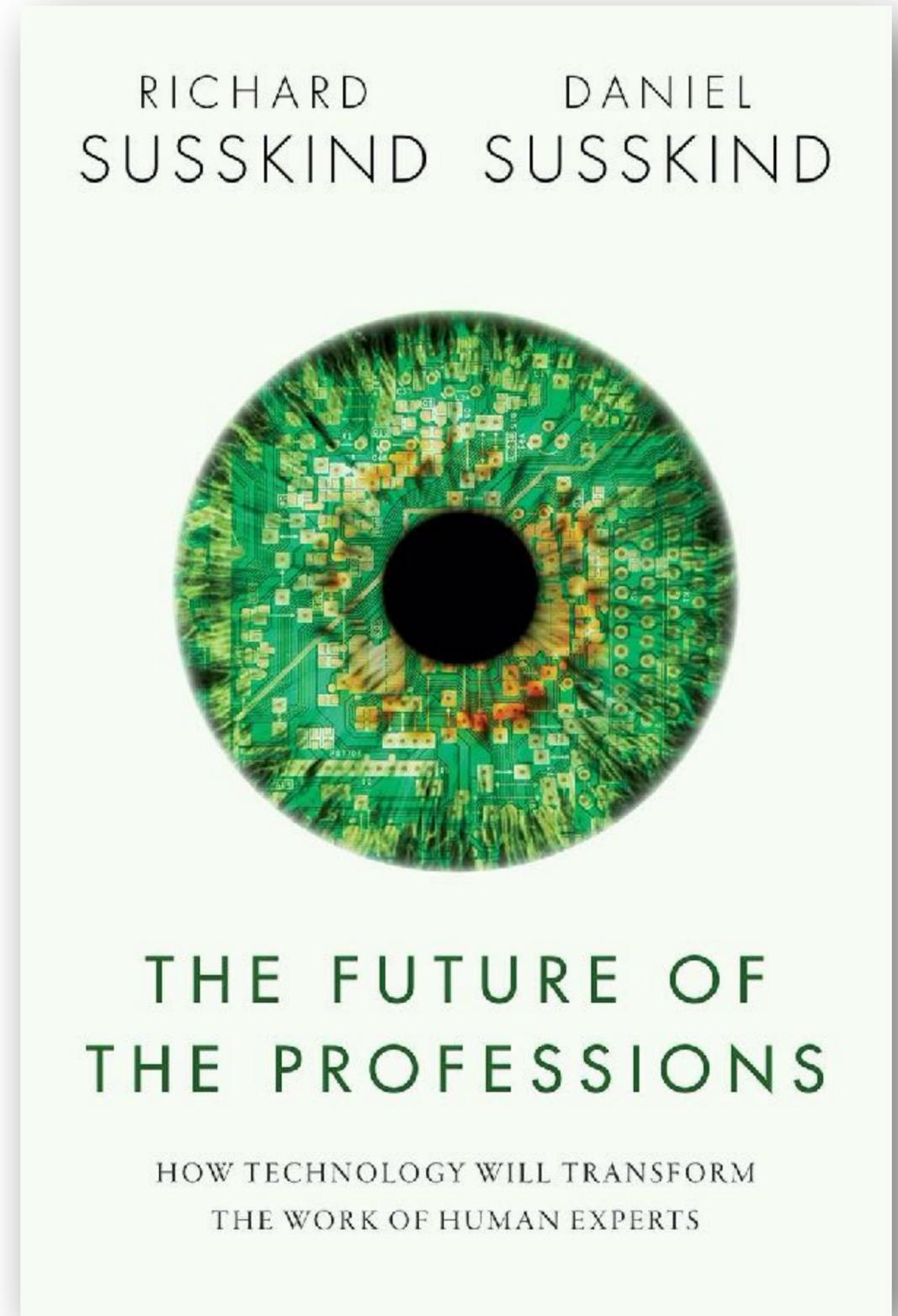
at the end -add back the deselected
t= 1
ect=1
e.objects.active = modifier_ob
+ str(modifier_ob)) # modifier
lect = 0
.selected_objects[0]
one.name].select = 1

("please select exactly two objects,
OPERATOR CLASSES
```

# Don't Panic Just Yet . . .

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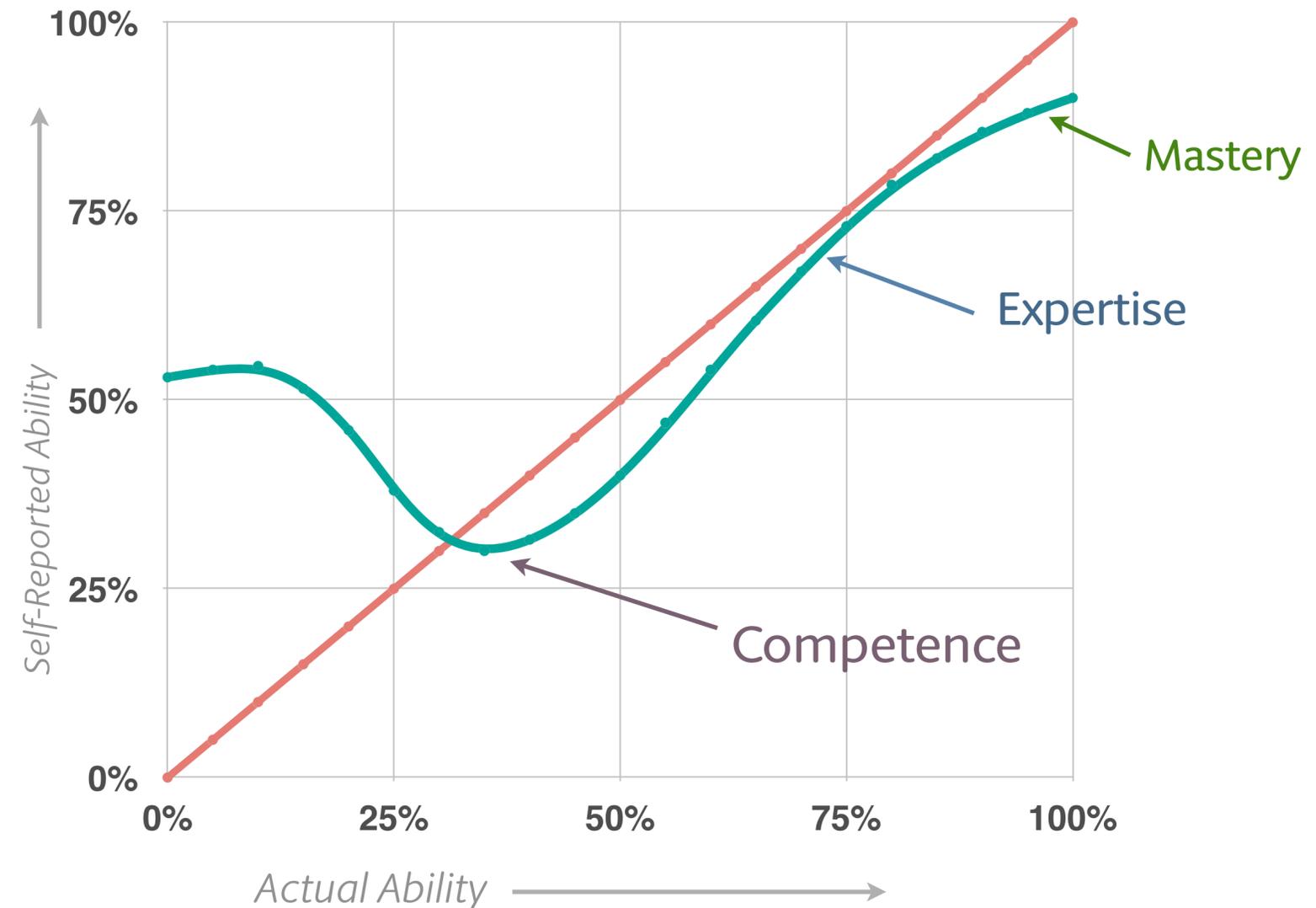
- Some things are more easily automated than others
- Thus technology augments legal practice, rather than replacing it
- Changes might mean fewer practitioners
- But they also might mean the mix of tasks you're performing is more interesting
- Constant learning to stay competent



# Remember Gawande and Dunning-Kruger

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- No human brain can hold everything
- You just need to know enough to spot issues and call in the right expertise
- Hard to judge expertise higher than your own, so due diligence requires external cues and references
- And that diligence takes time, so line up your potential team, vendors, and experts before the need arises





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