

# TechConnect

Your Law Firm Link to Industry News

APRIL 2018

## Letter from the Editors

As Tolstoy once wrote, “Spring is the time of plans and projects.” Hopefully, the snows of winter are finally behind us, and it’s time to look forward, build, and create! We at Mintz Levin continue to work with amazing companies that intend to make a dent in the universe. We feel lucky to assist many brilliant entrepreneurs develop new enterprises across the full range of the emerging companies’ sectors, including life sciences/biotech, clean energy/sustainability, and information technology such as big data, cybersecurity, AI, and social/digital media. Further, we assist “from concept to exit” and across the full range of needs such as corporate finance, privacy, security, employment, and IP.

This edition of *TechConnect* shows the depth and breadth of our coverage of Tech issues. We have included a podcast interview of Cliff Boro, a long-time friend and serial entrepreneur, who skillfully provides pointers to those seeking out capital from Angels and VCs. We also have two great articles in this issue: the first is about AI from the perspective of our patent professionals; the second is about privacy and how your company’s privacy policies can actually be a competitive advantage. Finally, we highlight Aphelion Path, a consulting shop based in Brooklyn that is helping emerging companies to accelerate growth and succeed.

As always, we welcome your questions and inquiries and we invite all of you to visit our website for emerging companies @<http://mintzedge.com/>.

Sincerely yours,

**Dan + Sam**



---

## EDITORS

- ▶ Daniel I. DeWolf
- ▶ Samuel Asher Efron

---

## RELATED PRACTICES

- ▶ Corporate & Securities
- ▶ Intellectual Property
- ▶ Privacy & Security
- ▶ Private Equity
- ▶ Real Estate
- ▶ Securities & Capital Markets
- ▶ Sports Law
- ▶ Technology Transfer
- ▶ Venture Capital

---

## RELATED INDUSTRIES

- ▶ Arts & Entertainment
- ▶ Energy & Clean Technology
- ▶ Financial Services
- ▶ Life Sciences
- ▶ Technology

---

## RELATED WEBSITES



---

## CONTENTS

- ▶ From the Edge: Jeremy Glaser and Cliff Boro Talk Raising Money from Angels and VCs

- ▶ [AI: The Path of the Future or Industry Hype?](#)
- ▶ [How to Leverage Privacy as a Key Competitive Advantage](#)
- ▶ [Innovator Profile: Aphelion Path](#)
- ▶ [Upcoming Events](#)

---

## From the Edge: Jeremy Glaser and Cliff Boro Talk Raising Money from Angels and VCs

In this episode of MinzEdge's new *From the Edge* podcast, Attorney Jeremy Glaser talks to serial entrepreneur, investor, and Simplexity Holdings General Partner Cliff Boro about how entrepreneurs can best position themselves to raise money from angel investors and venture capitalists.

Cliff has extensive experience with raising money from angels and VCs: he has raised capital for over a dozen companies. Here, he relies on that experience to offer insights into the various processes through which entrepreneurs and start-ups can raise funds and the various questions that come up along the way. When it comes to raising capital, is all money created equal? How do you find VCs who will partner with you through the ups and downs that come with early stage start-ups? What should entrepreneurs focus on before they approach VCs or angel investors? Listen to this podcast for the answers to those questions and more.

[Listen to the podcast »](#)

---

## AI: The Path of the Future or Industry Hype?

BY [MICHAEL RENAUD](#), [ADAM RIZK](#), AND [JINNIE REED](#)

Artificial intelligence (AI) — the science of teaching a machine how to “think” — has its roots in the 1950s. But until recently, it was considered a niche that was reserved for academics and government-sponsored research programs. And even today, AI's overarching vision — building a machine that can exhibit the general intelligence of a human being — remains aspirational.

Nonetheless, companies are now racing to integrate AI into everything from self-driving cars to diagnosis of medical disease. What has driven AI back to the forefront is the emergence of sensors, big data, and computational horsepower. All of these factors have contributed to seismic advances in machine learning — teaching computers to identify patterns and make predictions by analyzing vast amounts of data rather than by following a specific program.

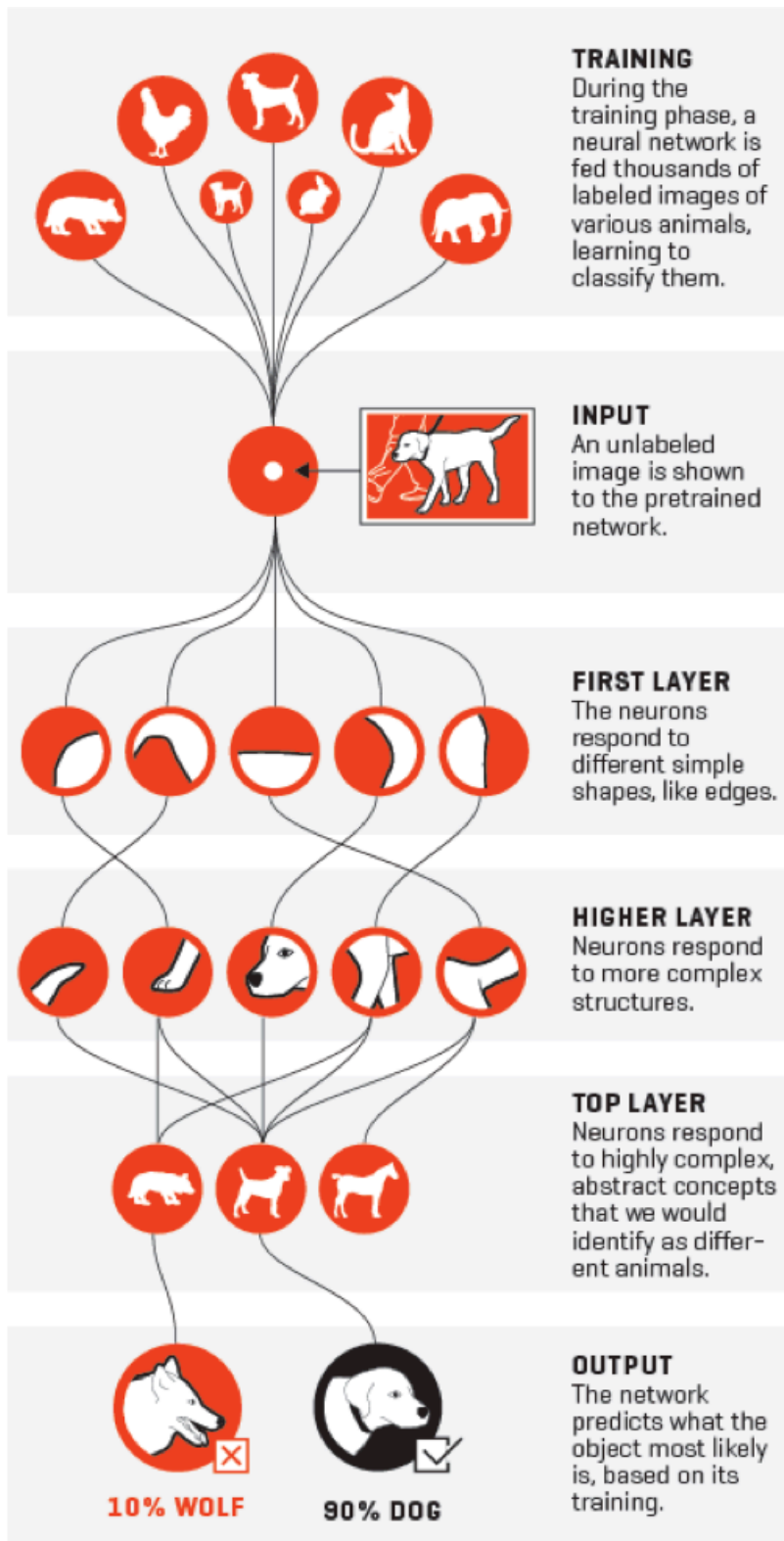
### Technology Background

The most promising machine learning systems are powered by deep learning — a machine learning technique that uses big data to train computers to extract and evaluate complex hierarchical relationships from raw data (such as labelled images or speech) using progressive refinement through many sequential computational layers. These advanced systems are already all around us:

- Natural speech recognition & intelligent agents (e.g., Apple Siri, Microsoft Cortana, and Amazon Alexa)

- Photo recognition (e.g., Google images and Apple iCloud)
- Advanced Driver Assistance Systems (ADAS) installed in the 2018 Audi A8 and Cadillac CT6 to support “Level 3” autonomous driving (limited self-driving with human backup)
- Biometric security systems (e.g., Apple Face ID)
- Medical imaging (e.g., Enlitic’s tumor detection, Arterys’s blood flow quantification and visualization, and early detection of diabetic retinopathy)
- Manufacturing and robotics

In contrast to more traditional techniques, which apply a predetermined set of rules to distinguish between objects (e.g., a fox and a dog) based upon expected differences in their features (e.g., the shape of their ears or bushiness of their coats), deep-learning exploits big data to teach computers by example. The diagram below is illustrative of how this all works at a high level. The training and classification process occurs on a computer called a “neural net,” which is composed of a number of simple computing nodes called “neurons” organized in successive stages called “layers.” Each neuron responds to different features, and provides its result to neurons in a successive layer that process higher order features, and so on. During the classification “training” phase, the computer is fed with many examples (in this case, labeled images of different types of animals), and the neural net is taught how to classify images by iteratively adjusting the mathematical response of each individual neuron to its respective input feature until the error of predicting the labelled examples has been minimized. After the training phase, the computer can then classify unlabeled images. Mispredictions can be used to further refine the computer’s training; in other words, the computer is always learning.



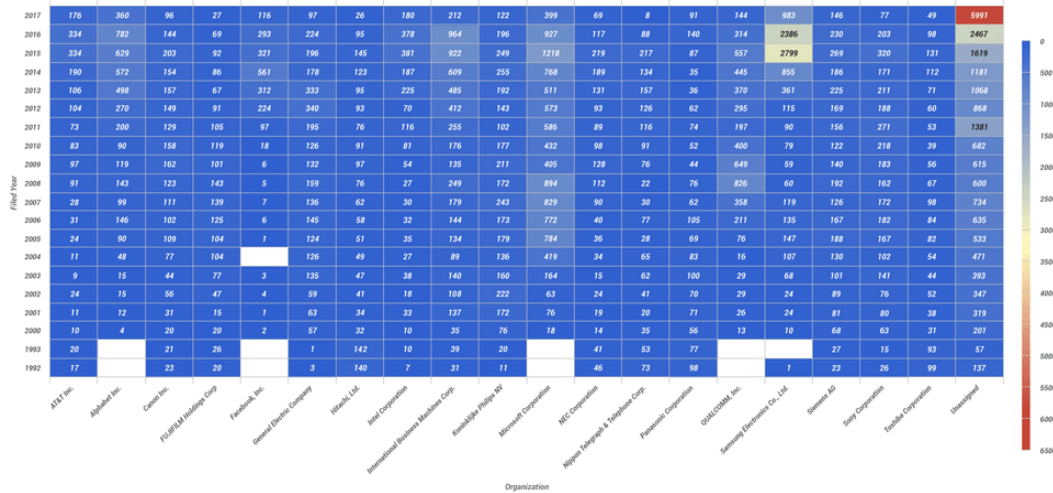
(SOURCE: [HTTP://FORTUNE.COM/AI-ARTIFICIAL-INTELLIGENCE-DEEP-MACHINE-LEARNING/.](http://fortune.com/ai-artificial-intelligence-deep-machine-learning/))

## AI Software and the IP Landscape

Many companies and universities have open-sourced or otherwise contributed a substantial amount of deep-learning software to the public. Caffe (UC Berkeley), TensorFlow (Google), and Torch are among the popular software frameworks.

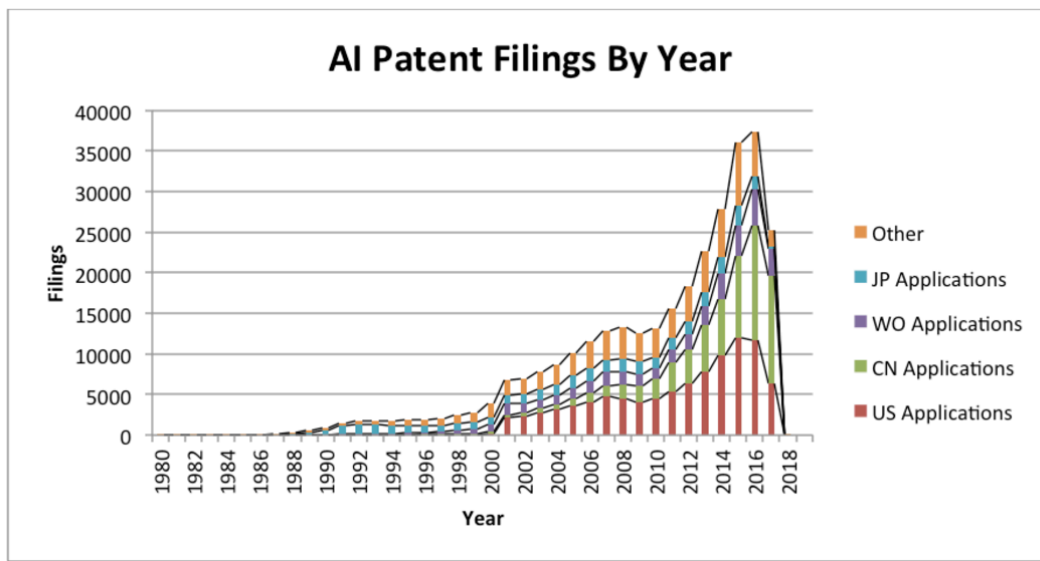
Nonetheless, it is undoubtable that every major player has its own proprietary techniques.

AI-based innovations have been the subject of USPTO filings for many years now and, as illustrated below, companies operating in this space have traditionally executed on an aggressive IP protection strategy.



VIEW LARGER

However, because these deep learning algorithms are perceived to be part of the software arts, the *Alice* decision and the ensuing uncertainty about the patentability of software have led to an abrupt decrease in U.S. filings as depicted below.



This signals that companies are not receiving sufficient counsel to confidently file patentable inventions in the AI space. Companies innovating in the area of AI should know that the Federal Circuit has now provided enough guidance to allow for patent applicants to direct claims to subject matter which will reliably survive *Alice* challenges. In short, AI claims that are crafted with enough care and precision won't fail under section 101 *Alice* challenges if the patent discloses and claims a technical solution to a technical problem using a non-conventional combination of elements. The Mintz Levin team has [written extensively](#) about the line of *Alice* decisions and has deep experience securing and enforcing patent rights in view of these issues. Most recently in *Finjan, Inc. v. Blue Coat Systems, Inc.*, 2018 U.S. App. LEXIS 601 (Fed. Cir. Jan. 10, 2018), the Federal Circuit confirmed its previous holdings from the *Alice* line of cases that “software-based innovations can make ‘non-abstract improvements to computer technology’ and be deemed patent-eligible subject matter[.]” *Finjan*, 2018 U.S. App. LEXIS 601 at \*8 (quoting *Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327, 1335-36 (Fed. Cir. 2016)). However, patentees need to continue to be mindful of providing sufficient disclosure of the way in which the claimed steps accomplish an advantageous

result. *Id.* at \*10-12.

## AI Hardware and Highly Parallel Processors

The hardware platform that provides the computational layers is called a “neural net.” Graphics processing units or GPUs — computer hardware devices that were traditionally used to push pixels out to a screen to render 3D graphics — are a natural fit. Among other reasons, unlike central processing units or CPUs, which typically contain a limited number of complex computational resources, GPUs typically contain a network of hundreds or thousands of highly parallel single input multiple data (SIMD) processors that are organized in a way that is conducive to running deep learning algorithms.

While the goals of deep learning and 3D graphics processing are different, the underlying GPU hardware architectures that they use are similar if not identical to the architectures that were at issue in recent ITC investigations that the Mintz Levin team brought on behalf of its clients Graphics Properties Holdings (formerly Silicon Graphics), Advanced Silicon Technology, and Advanced Micro Devices (AMD). The key differentiator is that deep learning applications do not use all of the 3D graphics hardware. Rather, deep learning mainly makes use of the GPUs’ compute units. But GPUs often contain additional circuitry that are specialized to accelerate the process of 3D graphics rendering, such as “fixed-function” triangle setup units, scan converters, rasterizers, and texture units, and have limited utility to deep learning.

Over the past several years, a new class of hardware accelerators has emerged. These devices — coined “neural processing units” or NPUs — are similar to GPUs but do not have the added overhead of fixed function GPU circuitry and are optimized for AI in hardware to handle dot product math and matrix operations using lower precision numbers. However, unlike GPUs, which allocate compute resources on demand to service graphics and AI workloads to minimize idle time, NPUs are dedicated to just one task — AI processing. As a result, choosing the optimum hardware solution largely depends on the specific use case. Looking further into the future, the way in which machine learning algorithms (and the hardware architectures of the GPUs or NPUs that run these algorithms) evolve with time will also factor into the selection process.

## Powered by AI: Our Path to the Future or Industry Hype?

Beyond refining the algorithms and the hardware, technology companies are competing to be first to market with meaningful new features that will truly differentiate them over their competitors. To be the winner requires much more than slapping a “powered by AI” label on the end-product. Among other things, it involves sifting through endless possibilities of how new sensor technologies, computational resources, and deep learning might be integrated together. Apple’s latest face unlock technology provides a prime example of this point. No less than six years ago (forever in the smart phone industry), Android-based devices were shipping with face unlock technology. Very much like Apple’s recently introduced Face ID, Android’s face unlock was powered by deep learning techniques. But the nearly universal consensus among Android users was that face unlock was nothing more than a marketing gimmick; it did not unlock well in low-lighting conditions, and in proper lighting conditions, it was vulnerable to being duped by a picture. Apple’s iPhone X caught the competition off guard. Having solved these problems by combining deep learning with more localized computational resources (for low latency) and a much more sophisticated set of sensors (including an infrared camera, a flood illuminator, a regular camera, and a dot projector), Apple transformed what was once a marketing gimmick into an actual selling point, sending every major company scurrying to develop and release “real” face unlock technology in its next-generation product.

## Conclusion

In sum, while it is less than certain how far the technology will ultimately take us, it is clear that the field of AI is young, disruptive, and here to stay.

---

## How to Leverage Privacy as a Key Competitive Advantage

BY BRIAN LAM AND CYNTHIA LAROSE

“Privacy by design” — while [not a new concept](#) — is certainly enjoying a new spot in the sunshine thanks to the European Union’s General Data Protection Regulation (“GDPR”) (43 days and counting...) and its codification of “privacy by design and default” in [Article 25](#).

Privacy can also be a key differentiator and a competitive advantage. Read on for some points that can help drive your data privacy/data management program.

## 1. Data Breaches Are at an All-Time High

Currently, data breaches, as catalogued by the [Identity Theft Resource Center](#) (“ITRC”), a U.S. nonprofit set up to provide education and assistance with ID theft, found that data breaches had reached an all-time high in 2017. [Analysis](#) of the ITRC report showed that breaches were up 45% since 2016, with the business sector taking the hardest hit with 55% of breaches.

Further, existing data breaches may be even worse than thought or disclosed. For example, in addition to the initial [breach](#) Equifax revealed in September 2017, it has now described that [additional types](#) of information went missing. Uber has also struggled to confront its own data breach; Uber CISO John Flynn recently [testified](#) before the U.S. Senate Subcommittee on Consumer Protection, Product Safety, Insurance and Data Security that paying off the hackers was wrong, and that Uber should have provided notice to the affected public sooner.

## 2. Most Consumers Will Not Deal with a Company Known to Lack Adequate Data Protection

Companies wondering how the public is dealing with this current landscape can rest assured that the public takes these issues seriously. A [recent published report](#) found that “69% of survey respondents said they would boycott a company known to lack adequate data protection.” Further, “more than half (55%) of respondents would avoid giving data to a company they know had been selling or misusing it before.”

Providing these data protections is no longer a nice-to-have. Consumers want to purchase from companies that value their privacy and security; failing to do so may cede a key competitive advantage.

## 3. Companies That Provide Clear Privacy Policies That Afford Customers Control Will Suffer Far Less Post Data Breach

A recent [Harvard Business Review](#) study examined the effects of data breaches on stock prices and found that data breaches could have significant effects on the stock price of a company experiencing the breach. Further, the study observed that competitors could be helped or harmed by the data breach depending on whether consumers viewed the competitor as either a better alternative, or somehow more risky in light of the existing data breach.

Underscoring actionable steps [detailed here](#) on Mintz Levin’s *Privacy and Security Matters* blog, the study went on to provide two basic strategies that when used by companies enabled the company “to protect or inoculate themselves from their own or a rival’s breach”:

- First, companies should explain in clear language how the company will be using and sharing customer data. This would include IP address and search history, for example.
- Second, companies should provide users control over their own data, giving the customer opportunities to opt out of certain practices, such as promotions.

The study found that customers did not punish breached companies that provided both transparency and control; instead, “empowered customers are more willing to share information and are more forgiving of data privacy breaches, remaining loyal after the fact.” Unfortunately, only around 10% of the Fortune 500 had implemented these two strategies in their data management practices. Empowering data subjects is a key component of the GDPR and may start to move the needle.

If you have any questions on how your organization can provide for and implement a transparent data management program that provides meaningful data controls to your customers, please do not hesitate to [contact the team at Mintz Levin](#).



---

## Innovator Profile: Aphelion Path

Taking a start-up from idea to growth is the crucial step that can cause many founders to stumble and ultimately doom businesses to mediocrity. That's why former operators at MakerBot, Zazzle, and Autonomous turned advisors to create the [Aphelion Path Consulting Group](#).

Before starting their business in winter 2017 at a Brooklyn coffee shop, the founders of Aphelion Path had spent many years at start-ups but felt that working for just a few wasn't enough. They wanted to take their learnings and experience to as many start-ups as possible to catch them before stumbling at that critical growth inflection point. Founding Aphelion Path as a start-up consulting group was the natural next move. At Aphelion Path, they take the best of what they've learned in start-up marketing, growth strategies, and organizational design and propagate it to many companies at once, increasing the impact of their

knowledge and maximizing shared learning potential. In the short time that Aphelion Path has operated, they've already advised NYC and international start-ups Tylko, Umbrella, eponym, and more listed on their [start-up consulting website](#).

Not to be "lumped together" with other consulting firms or individual consultants, the Aphelion Path team takes an open approach to the information and learnings they develop. Starting in the summer of 2018, they will be launching the T-48 program and the *Mission Control* blog (the Aphelion Path team is a fan of space/NASA). T-48 is a two-day weekend intensive where the Aphelion Path team embeds with a start-up to learn its systems and provide strategic recommendations by close of day on Sunday. It is offered completely free to any start-up that is approved for the program after an interview with the Aphelion Path team. Additionally, they are launching the *Mission Control* blog, a free resource of their training materials, strategic designs, and tactical execution documents, to help the start-ups that they cannot reach physically.

To apply for the first six slots of the T-48 program, email Aphelion Path here: [grow@aphelionpath.com](mailto:grow@aphelionpath.com).



---

## Upcoming Events

### New York

April 18: [Empire Startups Fintech Conference 2018](#)

April 23 – 24: [Kayo Women's Real Estate Investment Summit](#)

April 30 – May 2: [O'Reilly Artificial Intelligence](#)

April 30 – May 4: [Digital Content NewFronts](#)

May 2: [DLD New York](#)

May 8 – 9: [Techonomy](#)

May 8 –10: [WSJ's Future of Everything Festival](#)

May 9 –11: [99U Conference](#)

May 10: [TechDay New York](#)

May 14 – 16: [Consensus](#)

May 22 – 24: [DataDisrupt 2018](#)

June 19 – 21: [CB Insights Future of FinTech](#)

June 20 – 21: [Bloomberg Breakaway](#)

July 11 – 12: [Dash by Datadog](#)



July 18: [CNBC's Delivering Alpha](#)

## **Boston**

April 12: [Golden Seeds Office Hours](#)

April 18 – 20: [Cloud Foundry Summit](#)

April 23: [MIT Technology Review Presents: The Business of Blockchain](#)

April 23 – 27: [Boston Blockchain Week](#)

April 25: [The Ad Club CMO Breakfast with L.L. Bean](#)

May 9: [Retail Boost 2018](#)

May 15 – 17: [J.P. Morgan Global Technology, Media and Communications Conference](#)

May 17: [Small Business Expo 2018 - BOSTON](#)

May 23: [MIT Sloan CIO Symposium](#)

June 17 – 20: [LiveWorx Digital Transformation Conference](#)

June 24 – 27: [Identiverse](#)

July 11 – 13: [USENIX Annual Technical Conference](#)

July 24: [MITX Future of the Workplace](#)

## **San Francisco**

April 12 – 13: [Big Data Innovation Summit](#)

April 12 – 13: [Internet of Things Summit](#)

April 15 – 16: [Forbes CIO Conference](#)

April 16 – 17: [AGC's Information Security & Broader Technology Growth Conference](#)

April 16 – 20: [RSA Conference](#)

April 25: [Fighting Abuse @Scale](#)

April 26: [Founders' Leadership Series with Robin Hayes, President and CEO, JetBlue](#)

April 29 – May 2: [Marketing Nation Summit](#)

May 8 – 10: [Red Hat Summit](#)

May 9 – 10: [TRAIN AI](#)

May 14 – 15: [PG Connects](#)

May 14 – 16: [Apttus Accelerate](#)

May 22: [Slack Spec Developer Conference](#)

May 22 – 24: [Pure Accelerate](#)

May 31 – June 1: [QueryCon](#)

June 4 – 6: [Spark+AI Summit](#)

June 12 – 15: [DockerCon](#)

June 13 – 14: [Girls in Tech Catalyst Conference](#)

June 16 – 19: [Blockchain Economic Forum](#)

June 20 – 21: [DocuSign Momentum](#)

June 24 – 28: [Design Automation Conference](#)

June 28: [500 Startups Demo Day](#)

July 11 – 12: [Wearable Technologies Conference](#)

July 24 – 26: [Google Cloud Next](#)

## San Diego

April 19: [UCSD Research Expo 2018](#)

April 26: [Xconomy Forum: Big Data Meets Big Biology](#)

April 30 – May 2: [Gartner Tech Growth & Innovation Conference](#)

May 17 – 19: [4th Annual Conference on Business Research and Management Practices in Global Environments](#)

June 25 – 29: [San Diego Startup Week](#)

June 28 – 29: [4th Annual SD Venture Group VC Road Trip](#)

June 29: [6th Annual VC Regatta](#)

## Washington, DC

April 17: [ATARC Federal Emerging Technology Summit](#)

April 19: [Constellation Washington DC - Explore](#)

April 24: [Pitch Expo and Startup Gauntlet](#)

April 26: [The Power of Women from Wall Street to Entrepreneurship: Sallie Krawcheck](#)

April 26: [Mid-Atlantic Marketing Summit: Washington 2018](#)

May 16 – 17: [VCs-to-DC](#)

May 16: [Financing Your Business with Local Resources](#)

## Contacts

### CORPORATE

---

**Daniel I. DeWolf** (*Editor*)

Member, New York

212.692.6223

[DDeWolf@mintz.com](mailto:DDeWolf@mintz.com)

**Samuel Efron** (*Editor*)

Member, New York

212.692.6810

[SEffron@mintz.com](mailto:SEffron@mintz.com)

**Susan J. Cohen**

Member, Boston

617.348.4468

[SJCohen@mintz.com](mailto:SJCohen@mintz.com)

**Sebastian E. Lucier**

Member, San Diego

858.314.1519

[SELucier@mintz.com](mailto:SELucier@mintz.com)

**Cliff Silverman**

Associate, New York

212.692.6723

[CMSilverman@mintz.com](mailto:CMSilverman@mintz.com)

**Jeremy D. Glaser**

Member, San Diego

858.314.1515

[JDGlaser@mintz.com](mailto:JDGlaser@mintz.com)

**Dean Zioze**

Member, Boston

617.348.4795

[DZioze@mintz.com](mailto:DZioze@mintz.com)

**Adam C. Lenain**

Member, San Diego

858.314.1878

[ACLenain@mintz.com](mailto:ACLenain@mintz.com)

**Lewis J. Geffen**

Member, San Diego

617.348.1834

[LJGeffen@mintz.com](mailto:LJGeffen@mintz.com)

**Kristin Gerber**

Associate, Boston

617.692.3043

[KAGerber@mintz.com](mailto:KAGerber@mintz.com)

**Marc D. Mantell**

Member, Boston

617.348.3058

[MDMantell@mintz.com](mailto:MDMantell@mintz.com)

**Sahir Surmeli**

Member, Boston

617.348.3013

[SSurmeli@mintz.com](mailto:SSurmeli@mintz.com)

**Gregory Chin**

Member, San Francisco

415.432.6017

[GChin@mintz.com](mailto:GChin@mintz.com)

**Yilei He**

Associate, New York

212.692.6232

[YHe@mintz.com](mailto:YHe@mintz.com)

**Rachel Gholston**

Associate, New York

212.692.6244

[RAGholston@mintz.com](mailto:RAGholston@mintz.com)

**Talia Primor**  
Associate, New York  
212.692.6740  
[TSPrimor@mintz.com](mailto:TSPrimor@mintz.com)

**Kaitlin Fox**  
Associate, New York  
212.692.6759  
[KFox@mintz.com](mailto:KFox@mintz.com)

---

## PRIVACY & DATA SECURITY

**Cynthia J. Larose**  
Member, Boston  
617.348.1732  
[CJLarose@mintz.com](mailto:CJLarose@mintz.com)

**Julie Korostoff**  
Member, Boston  
617.348.1638  
[JKorostoff@mintz.com](mailto:JKorostoff@mintz.com)

**Susan L. Foster**  
Member, London  
617.348.1638  
[SLFoster@mintz.com](mailto:SLFoster@mintz.com)

**Brian H. Lam**  
Associate, San Diego  
858.314.1583  
[BHLam@mintz.com](mailto:BHLam@mintz.com)

---

## TECHNOLOGY TRANSFER

**Julie Korostoff**  
Member, Boston  
617.348.1638  
[JKorostoff@mintz.com](mailto:JKorostoff@mintz.com)

**Ran Zioni**  
Member, New York  
212.692.6757  
[RZioni@mintz.com](mailto:RZioni@mintz.com)

---

## INTELLECTUAL PROPERTY

**Peter Corless**  
Member, Boston  
617.348.1859  
[PCorless@mintz.com](mailto:PCorless@mintz.com)

**Michael D. Van Loy, PhD**  
Member, San Diego  
858.314.1559  
[MDVanLoy@mintz.com](mailto:MDVanLoy@mintz.com)

**Peter Snell**  
Member, New York  
212.692.6850  
[PSnell@mintz.com](mailto:PSnell@mintz.com)

**Sean J. Grygiel**  
Member, New York  
212.692.6720  
[SJGrygiel@mintz.com](mailto:SJGrygiel@mintz.com)

[www.mintz.com](http://www.mintz.com)

Copyright © 2018 Mintz, Levin, Cohn, Ferris, Glovsky and Popeo, P.C.

This communication may be considered attorney advertising under the rules of some states. The information and materials contained herein have been provided as a service by the law firm of Mintz, Levin, Cohn, Ferris, Glovsky and Popeo, P.C.; however, the information and materials do not, and are not intended to, constitute legal advice. Neither transmission nor receipt of such information and materials will create an attorney-client relationship between the sender and receiver. The hiring of an attorney is an important decision that should not be based solely upon advertisements or solicitations. Users are advised not to take, or refrain from taking, any action based upon the information and materials contained herein without consulting legal counsel engaged for a particular matter. Furthermore, prior results do not guarantee a similar outcome.