Compound Theses

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Specific areas we're excited about at Compound

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At Compound, sometimes we work backwards from deep research in categories we're interested in and sometimes highly intelligent and bold founders open our eyes to new possibilities and frontiers. While we remain excited about the latter, we wanted to take the opportunity to publicly share the areas that we've identified from our research in the same spirit that Union Square Ventures has spearheaded with their threads and theses. This is meant to be a living, breathing document that we'll update over time as we continue to learn.

As always, we'd love to hear from you if you're building something in or just actively researching one of the areas below.

Simulation (full post here)

- As our worlds move increasingly to trained models where data is the fuel for progress, we're interested in companies taking on simulation or building pickaxes for simulated environments across a variety of industries and use-cases. We're specifically interested in high graphical fidelity simulation or simulation tools that can take advantage of domain transfer utilizing other forms of ML to train new models from existing data.
- *Update (9/24/18) — Since the original post we've invested in AI Reverie. Read our post on the investment here.*

Manipulation and detection of digital assets (full post here)

- The introduction of GANs and advances in machine learning broadly have brought forward an impressive ability to synthesize digital media (whether audio or video). We believe this poses a systemic future risk and are very interested in scalable detection platforms.
- The trickle down of manipulation of digital assets will be how the future of verification of facts/trust is impacted by technology. We are interested in all companies playing in these realms both on the falsification AND detection side.

Adversarial Attacks on machine learning models (tweets here)

- Adversarial attacks on ML models will pose multiple threats to a world in which ML proliferates in commercial settings. We expect new types of companies will be built that specialize in this type of defense across both image-based attacks and other input-based attacks.

Utilizing AI/ML for creative industries. (tweets here)

- Creativity continues to be one of the difficult nuts to crack for machine intelligence, however various forms of machine learning have started to introduce scalability into the creation process. We believe this will accelerate across a variety of use-cases.
- *Update (6/1/2019) — Since the original post we've invested in RunwayML and an animation company.*

The Future of Family Planning (full post on fertility here + updated views on investing in the space here)

- Due to a variety of economic, societal, and technical shifts, the future of family planning will be radically different from past generations. If you're focused on tackling pure technology, difficulty of financing or the operational complexities related to the family planning and/or fertility process ranging from analytics to decision to implementation to continual monitoring (for both women and men) we'd love to talk.
- We're also very interested in the moral questions surrounding genetic testing of embryos and other topics surrounding utilizing technology to increase choice in the birth process.
- *Update (8/20/2019) — Since the original post we've invested in a stealth embryo synthesis company.*

Digital Therapeutics

- We've already invested in several software-based treatment and therapeutics companies including Talkspace, Onward, Tia (which we wrote about here), and Clear Genetics. We believe that with increasingly large datasets and improved machine learning accuracy that for certain ailments and conditions, software can be equally if not more effective than existing options without the same side effects and at a fraction of the cost.

Microbiome Translation

- Only recently have scientists begun to characterize the effects and influences of the microbiome on disease, recovery and neurological functions. We're excited about the possibilities for companies to better define and make use of the ways in which gut bacteria influence human development and wellness as well as alter physiological states.

Machine and Deep Learning Diagnostics and Treatment Recommendation

- As machine and deep learning compute resources continue to become more powerful and decline in price, software is quickly emerging as a powerful tool for early detection of disease, more accurate diagnoses, treatment recommendation, predicting treatment response to therapies and earlier prognoses. Several companies are already seeing great results in these areas but we believe it's only the tip of the iceberg.

Computational Biology

- Sequencing technology costs are quickly approaching zero, spearheading gains in the conversion of raw genomic data into useful information. Biology is incredibly complex and we're just beginning to understand the ways in which specific genetic and physiological data influence our health. We're excited about the wave of companies that are running experiments to further understand these datasets as well as those that are using cutting edge technologies to generate medically useful information.

Psychedelic Science

- With the impending reclassification of certain psychedelic drugs, as well as improved data surrounding efficacy, we're interested in learning more about different ways commercial entities will arise that utilize the effects of these products to improve wellbeing and general health.

Projection Mapping + "Headsetless" Immersive Computing

- While bullish on Immersive (VR/AR/3D) broadly, we're specifically interested in companies with a focus on geography-constrained, headsetless augmented reality experiences. Artists like Joanie Lemercier have done incredible things with this thesis thus far, and we believe there are multiple consumer and enterprise use-cases for blending digital and physical worlds.

Social VR

- While headset adoption continues to take time, there are still opportunities in infrastructure level SocialVR (multi-application) as well as individual platforms that blend multiple activities into a closed metaverse. Web + mobile accessibility is important to us.

Voice as a Computing Interface

- We believe that we're on the cusp of a voice computing revolution due to the proliferation of devices such as the Amazon Alexa and Google Home, in addition to the fact that as of last year over 20% of searches on Android devices were done through voice. As natural language processing systems continue to improve, we're seeking out companies that are building products that weren't possible previously with graphical user interfaces.

Avatar-first platforms (full post here)

- Our online identities are increasingly going to visually manifest themselves in a mainstream way. We're interested in any companies working on either avatar-first platforms, or key economies/infrastructure at the avatar layer.

Food service robots (full post here)

- Increasing labor costs, low margins, difficulty in finding skilled labor line up perfectly for an automation opportunity. While there have been many players in this space, we generally don't believe that an intricate custom hardware approach is what will win this market in the short term unless the integration is full-stack (robot -> food service). We're very interested in companies that fully vertically integrate across the entire food process, but also are open to having commodity hardware enabled by proprietary software that can be sold into modifying the food service experience.
- *Update (8/20/2019) — Since the original post we've invested in Ono Food Co. Read our post here.*

In-home robots

- Robots are still at the early stages of entering easily deployable physical areas such as warehouses and other commercial areas, however the home will follow. Once you scale the robot up from inches off the ground (think iRobot Roomba scale) there are a lot of opportunities for automation of our daily lives. We're interested in talking to founders who have a unique POV on what the initial repeated, high-value tasks are that a robot will do in the home.

Developer Tools

- There are still hurdles that exist before blockchains become as ubiquitous as the protocols that we interact with on a daily basis such as TCP/IP, HTTP and SMTP. **We're excited about projects building tools for developers that solve well-known problems around public blockchain technology such as scaling, interoperability, privacy, and security, amongst others.** Thus far we've invested in NuCypher and another unannounced project and plan on making several more investments in these areas in the coming months/years.

Protocols enabling Self-Sovereignty

- While blockchains still suffer from scalability and performance issues, the value provided by their trustless architecture can supersede performance issues when dealing with sensitive data; the safekeeping of which we're forced to rely on third parties for today. We're interested in protocols and applications that provide the functionality necessary for a world where users aren't forced to trust in any individual or organization but rather in the incentives implemented through systems that combine distributed systems, cryptography and economics. We've already invested in Blockstack (which we wrote about here), Orchid and are keen about investing in others.

Value Exchange

- Using digital currencies, protocols can enable value exchange of a scarce resource that is often under or unutilized such as file storage, CPU/GPU cycles, bandwidth, network traffic, amongst others. When fungible, these scarce resources can quickly become commoditized — bringing down costs and enabling users to profit. We're also interested in similar protocol designs that enable exchange of non-fungible resources (such as a user's data or content creation) that use a token native to the protocol in order to create what we believe will be the first wave of decentralized autonomous organizations. These protocols can enable users to capture the value created by the network rather than the rent-seeker in the middle. We're looking to invest in both projects addressing these areas directly as well as the "picks and shovels" surrounding facilitation such as our investment in Mattereum.

New Game Engines and Game Engine Infrastructure

- With both Unity and Unreal taking poll positions, many believe game engines could be a wasteland moving forward. Our view is that with the shifts happening within gaming across both physical inputs (shift to cloud) as well as types of games (continuous, subscription-based, cross-platform, deep economies, etc.) many of the surrounding (or core creation) infrastructure could be owned by new platforms or companies.

Synthetic food products

- We're still in the early phases of a deep dive into synthetic biology but believe that as key scaling infrastructure continues to be built, new CPG products will be able to scale within the synthetic food category over the next 3–5 years.

The proliferation of gender fluidity

- We believe that there are multiple companies in the consumer space to be built around the proliferation of gender fluidity, specifically which we are seeing within Gen Z and younger. This can manifest itself in both digital and physical products.

Alternative authentication solutions and private key management

- As software continues to "eat the world", our most valuable possessions, assets and data are accessed through use of passwords. The standards for these passwords has become increasingly insecure and our belief is that they'll cease to exist in their current form in the not-too-distant future. We're excited about companies building new password systems such as more accessible and easier to use implementations of private keys and biometrics.