Market Transformation Through AI Startups

Gleb Chuvpilo
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<thead>
<tr>
<th>Investor</th>
<th>Serial Entrepreneur</th>
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| • Venture Partner @ Peak State Ventures and Rewired (Venture Capital funds).  
• Portfolio Manager @ Clarium Capital (Peter Thiel’s global macro hedge fund).  
• AI-Driven Quantitative Trader @ Goldman Sachs ($10B market-neutral hedge fund). | • Founding Engineer @ Pager ($62.6M raised; VCs include NEA & Lux; Partnership with Horizon Health covering 3.8 million patients).  
• Co-Founder & Head of R&D @ Ride (TPG Growth portfolio company; acquired by Enterprise Holdings in 2016).  
• Co-Founder & CEO @ Authy (Y Combinator class 2012; acquired by Twilio in 2015). |

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<tr>
<th>Scholar</th>
<th>Researcher</th>
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| • MS in Electrical Engineering & Computer Science @ MIT. Focus: Artificial Intelligence and Robotics.  
• MBA in Finance & Strategic Management @ Wharton. Focus: Venture Capital Investment Strategy.  
• Chartered Financial Analyst (CFA) & Member of the New York Society of Security Analysts (NYSSA). | • Software Engineer @ Palantir Technologies (built Artificial Intelligence algorithms for Palantir Metropolis).  
• Researcher in AI & Robotics @ MIT Computer Science and Artificial Intelligence Lab (designed SLAM algorithms for autonomous underwater robots for the US Navy).  
• Researcher in Computational Genomics @ Broad Institute at MIT and Harvard (with Nick Patterson). |
Startup Landscape
Top VC-Backed AI Startups

2020

Healthcare
- Recursion
- Zebras
- ProteinQure
- Eko
- Healthy.io
- CYCLICA
- OXIN
- PAIGE
- Atomwise
- Butterfly
- Subtle Medical
- Concerto

Finance & Insurance
- Comply Advantage
- FeatureSpace
- Hyperscience
- Zesty.ai
- Lemonade
- Tractable

Transportation
- Ghost
- Isee
- KONUX
- Loadsmart
- DuSimple
- Holomatic
- Aurora
- Voyage

Construction
- ALICE
- BUILT

Retail & Warehousing
- TheYes
- Replica
- Mapillary
- Synapse
- Grabango
- Heuritech
- OSARO
- Faire
- Doraloot
- Covariant

Govt. & City Planning
- Shield AI
- AMP Robotics
- Replica
- Lexion
- Razorlabs

Legal
- Lexion
- Mapillary

Mining
- RAZORLABS

Food & Agriculture
- BenSonic Hill
- Natural

Energy
- Beyond Limits
- Invenia
- Tachyus

Telecom
- Deepsig
- MetaWave

Real Estate
- Caspar

CROSS-INDUSTRY TECH
- essors
- Lightmatter
- TINY CORE
- Xanadu
- Kiron

NLP, NLG, & Computer Vision
- Primer
- Sherpa.ai
- Affectiva
- Hugging Face

Cybersecurity
- SentinelOne
- Obsidian
- Onfido
- BlueHexagon

BI & Ops Intel
- Climecell
- Clari
- Falkonry

Sales & CRM
- CRESTA
- Integrate.ai

Other R&D
- Sparkcognition
- KYNDI
- Paradigm

Source: CB Insights
Deep Learning is a class of Machine Learning techniques that combine large neural networks (millions of free parameters), high performance computing (thousands of processors running in parallel), and Big Data (e.g. millions of color images or recorded chess games).

Deep Learning is revolutionizing perception of the world by software agents (vision, voice, natural language, etc), and is now beating humans at many of these tasks.

Deep Learning is also supercharging capabilities of industrial and consumer robots, as well as autonomous vehicles, since perception is crucial to embodied AI.
James Watt’s steam engine introduced in 1775 allowed humans to overcome the limitations of muscle power with mechanical power.

This enabled simultaneous rapid developments in mechanical engineering, chemistry, metallurgy, electricity, etc.

The result was an explosion in both human population and human social development.

The Industrial Revolution ushered in humanity’s first machine age: for the first time our progress was driven almost entirely by technology, rather than biology.

That technology was easy to copy, which caused rapid globalization on top of rapid technological development.

* Source: Erik Brynjolfsson, Second Machine Age.
We live in an age of **paradox**. Systems using **AI** match or **surpass human-level performance** in more and more domains, yet measured **productivity growth** has **declined** by half over the past decade, and real income has stagnated since the late 1990s.

Our solution to this productivity paradox is to leverage a **different flavor of AI called IA**, or **Intelligence Amplification**, invented along with the now-forgotten science of **Cybernetics** by Norbert Wiener and Ross Ashby in the 1940s.

This investment thesis is effectively a **long exposure to productivity gains** resulting from innovation in **AI**.

* Source: Nicholas Bloom 2019. Are Ideas Getting Harder to Find?
Who’s Leading this AI Revolution?
USA Has 6x Lead Over China

*Source: https://people.csail.mit.edu/chuvpilo/publications.html*
Who’s Leading this AI Revolution?

Top Innovators in AI

1. Google (USA) - 220.1
2. Stanford University (USA) - 106.1
3. MIT (USA) - 99.6
4. UC Berkeley (USA) - 86.7
5. Carnegie Mellon University (USA) - 71.3
6. Microsoft (USA) - 66.5
7. University of Oxford (UK) - 51.9
8. Facebook (USA) - 48.5
9. Tsinghua University (China) - 46.8
10. Princeton University (USA) - 45.0
11. UT Austin (USA) - 40.1
12. ETH (Switzerland) - 39.0
13. EPFL (Switzerland) - 36.5
14. Harvard University (USA) - 36.0
15. Cornell University (USA) - 35.6
16. Columbia University (USA) - 33.3
17. New York University (USA) - 33.2
18. UCLA (USA) - 33.0
19. University of Illinois (USA) - 32.8
20. KAIST (South Korea) - 31.8

*Source: https://people.csail.mit.edu/chuvpilo/publications.html
Did Covid Affect AI Startups?

Venture Funding is Strong in 2020

Global Venture Dollar Volume Through Q3 2020 By Stage

- Angel-Seed
- Early Stage
- Late Stage
- Technology Growth

Source: Crunchbase
Did Covid Affect AI Startups?

Pace of AI Acquisitions is Increasing

THE PACE OF AI ACQUISITIONS HAS RAPIDLY INCREASED IN RECENT YEARS

Each line represents 1 AI acquisition

Source: CB Insights
We Focus on 3 AI-driven Verticals

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<tr>
<th>Innovation in Intelligence Amplification</th>
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<tr>
<td>• Al-Powered <strong>Healthcare</strong></td>
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<tr>
<td>• Personalized Healthcare</td>
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<tr>
<td>• Drug &amp; Chemical Discovery</td>
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<tr>
<td>• Medical Imaging/Diagnostics</td>
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<tr>
<td>• Patient Analytics</td>
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<tr>
<td>• Computational Biology</td>
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<tr>
<td>• Al-Powered <strong>Fintech</strong></td>
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<tr>
<td>• Credit Scoring/Direct Lending</td>
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<td>• Quantitative &amp; Asset Management</td>
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<td>• Insurance</td>
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<tr>
<td>• Regulatory/Compliance</td>
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<tr>
<td>• Fraud Detection</td>
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<tr>
<td>• Al-Powered <strong>Enterprise</strong></td>
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<tr>
<td>• Robotic Process Automation</td>
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<td>• Retail/Warehouse</td>
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<td>• Intelligent Logistics/Supply Chain</td>
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<tr>
<td>• Drones</td>
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<tr>
<td>• Autonomous Vehicles/Delivery</td>
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Thank You and Please Stay in Touch!

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