

# Business models in data science and AI

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# Who I am

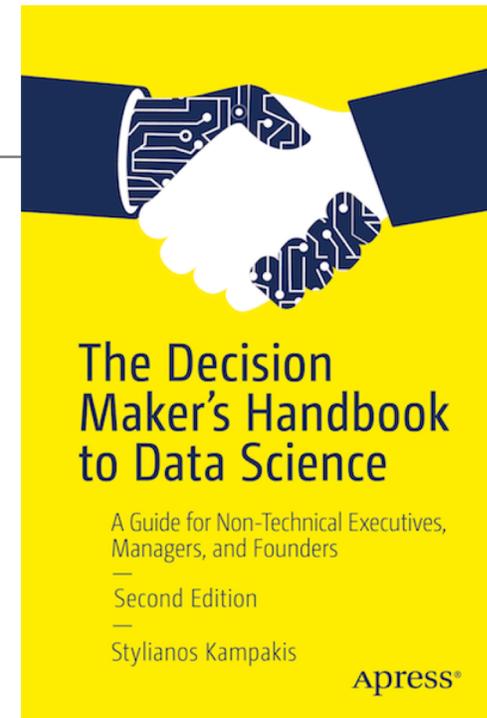
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Just call me Stelios 😊 (full name: Stylianos Kampakis)

+10 years in data science and AI

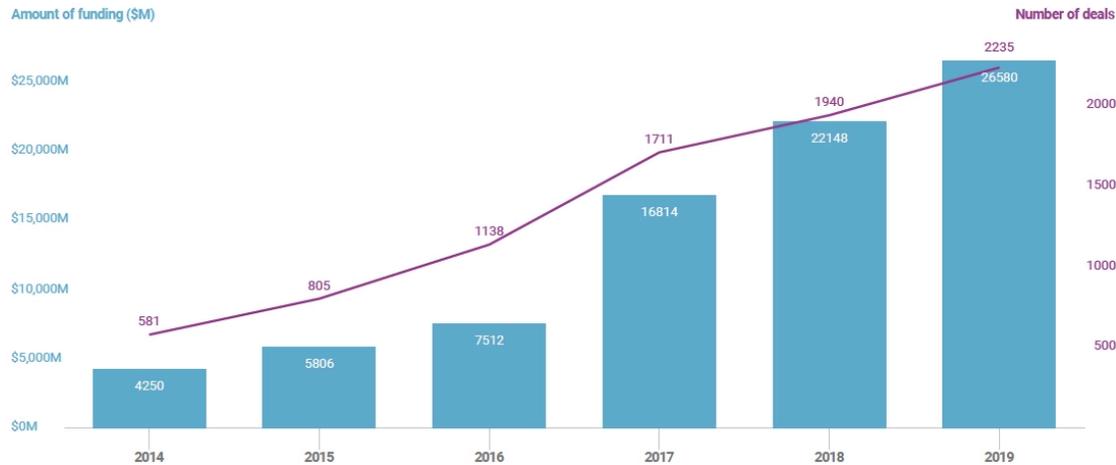
<http://thedata scientist.com>

[stelios@thedata scientist.com](mailto:stelios@thedata scientist.com)

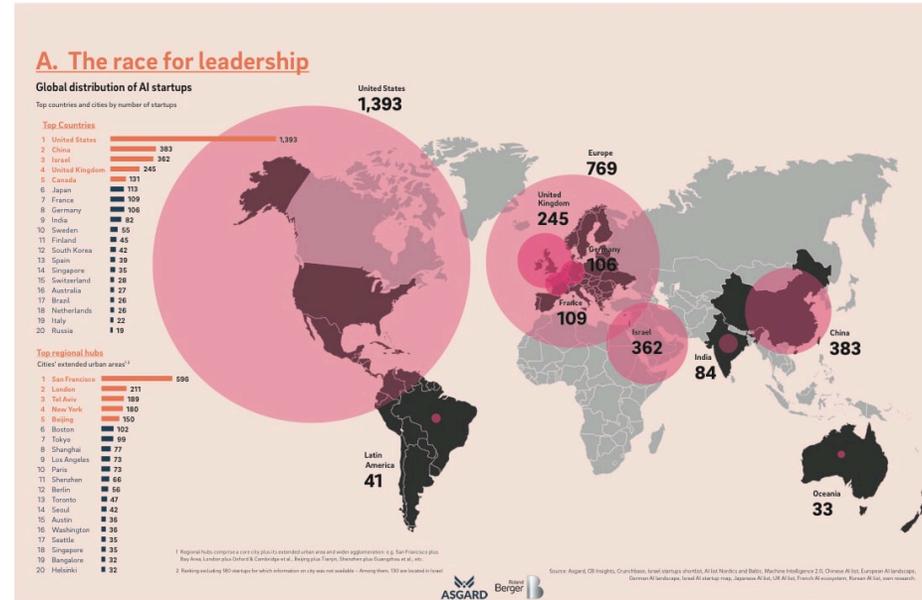


# Data science and AI are everywhere!

2019 sees record funding to AI startups at \$26.6B



Created with: CBINSIGHTS Source: CB Insights



# Types of data science and AI businesses

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## Software

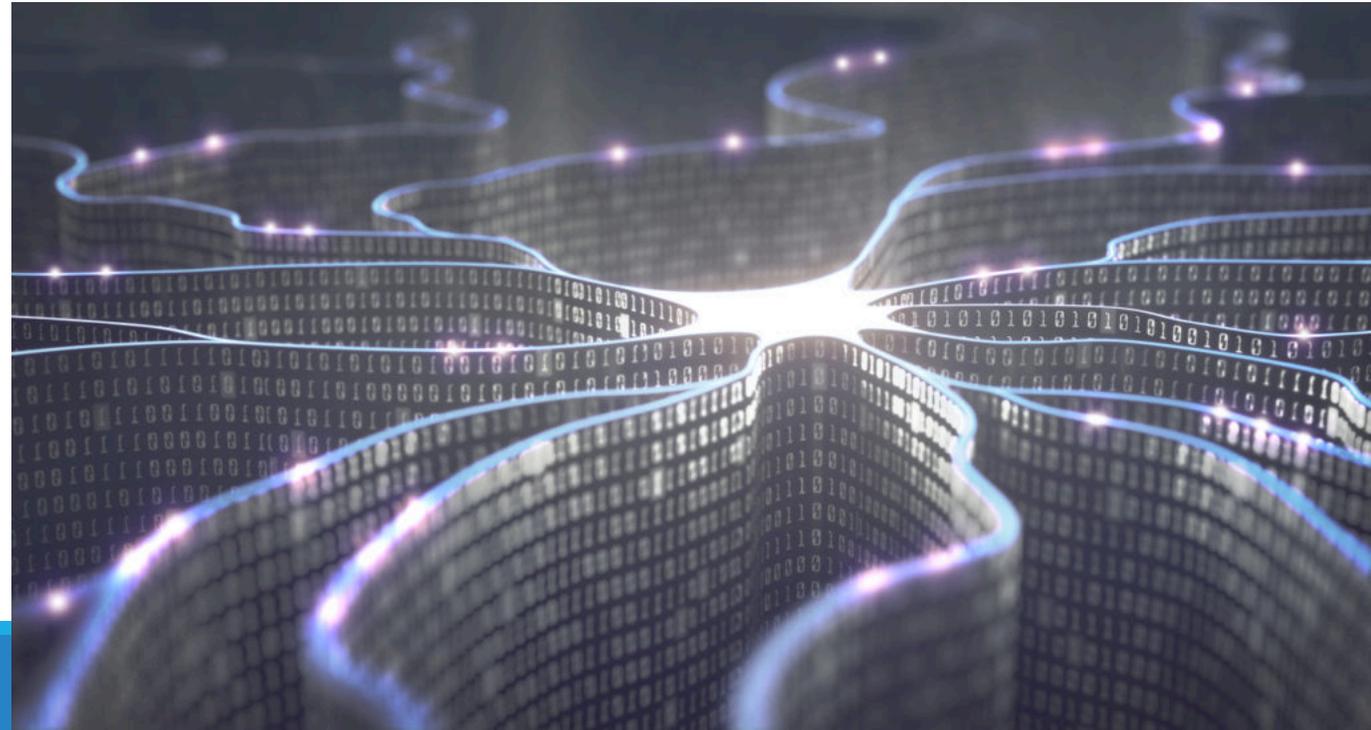
- Try to create some kind of SaaS product, e.g. a dashboard

## Deep tech

- The business is one fundamental innovation

## Services

- Sell consulting



# Challenges

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## Deep tech

- Very risky and open-ended
- Requires special knowledge
- Super effective if done right, but in practice it is very difficult to create something fundamentally new in AI and software (as opposed to biotech for example)

## Services

- Scaling is more challenging
- Data science/AI is opaque, and not always an easy sell

## Software

- Ideal, but..
- AI businesses are NOT SaaS businesses

# AI companies

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## Andreeseen-Horowitz

- <https://a16z.com/2020/02/16/the-new-business-of-ai-and-how-its-different-from-traditional-software/>

We are huge believers in the power of AI to transform business: We've put our money behind that thesis, and we will continue to invest heavily in both applied AI companies and AI infrastructure. However, we have noticed in many cases that AI companies simply don't have the same economic construction as software businesses. At times, they can even look more like traditional services companies. In particular, many AI companies have:

1. **Lower gross margins** due to heavy cloud infrastructure usage and ongoing human support;
2. **Scaling challenges** due to the thorny problem of edge cases;
3. **Weaker defensive moats** due to the commoditization of AI models and challenges with data network effects.

Anecdotally, we have seen a surprisingly consistent pattern in the financial data of AI companies, with gross margins often in the 50-60% range – well below the 60-80%+ benchmark for comparable SaaS businesses. Early-stage private capital can hide these inefficiencies in the short term, especially as some investors push for growth over profitability. It's not clear, though, that any amount of long-term product or go-to-market (GTM) optimization can completely solve the issue.

# Services vs software

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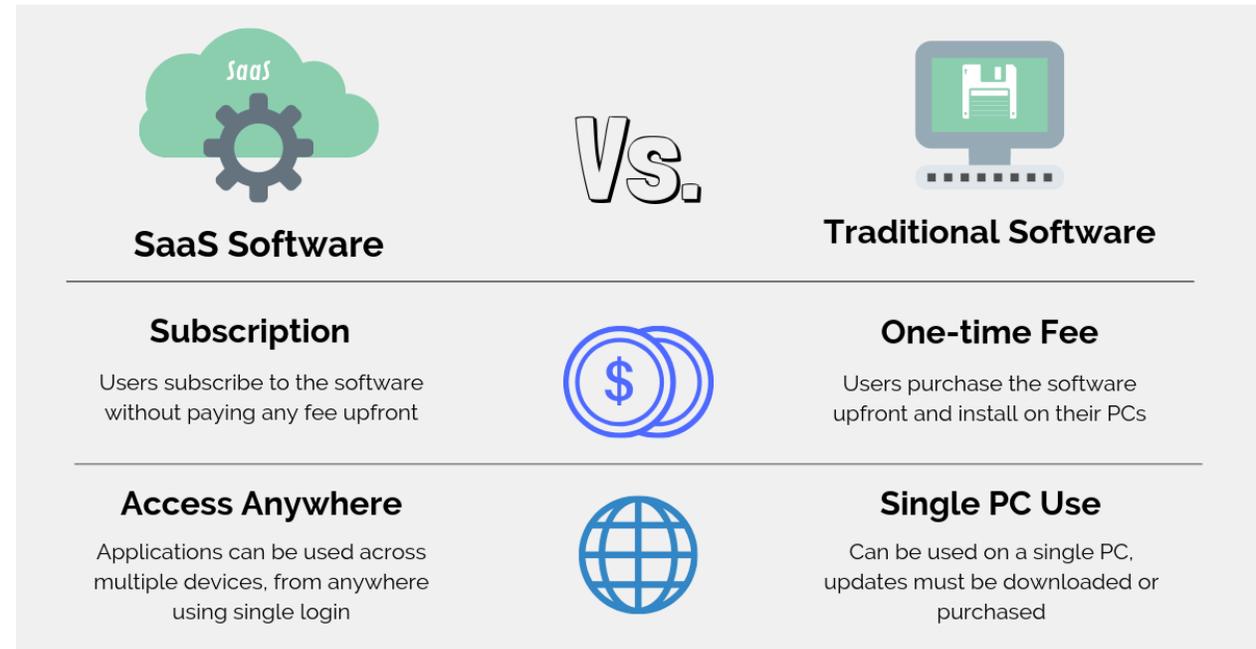
## SaaS

- High margins: 60%-80%
- Superlinear scaling
- Moats

## Services

- Gross margins are at best 50%
- Linear scaling at best

AI companies sit in between



# Challenges for AI companies

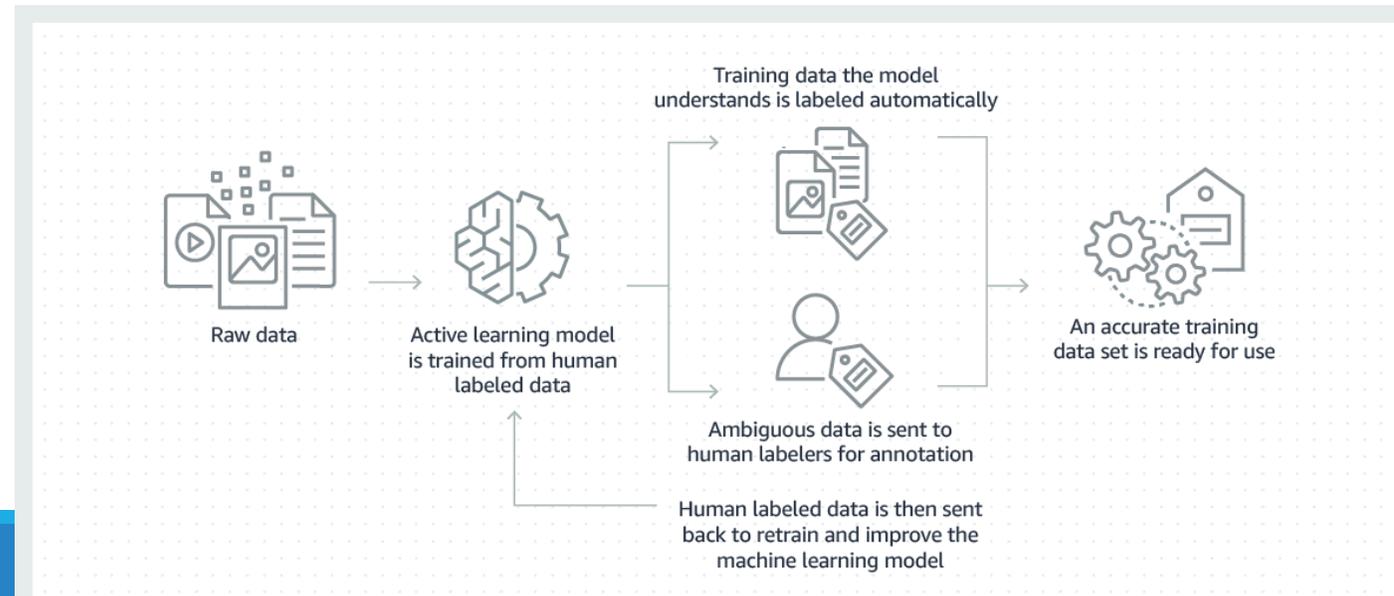
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Cloud infrastructure is a substantial – and sometimes hidden – cost for AI companies

- Training models can cost a lot!
- Models also require retraining

Many AI applications rely on “humans in the loop” to function at a high level of accuracy

- Labelling datapoints
- Reviewing decisions made by the algorithm



# Challenges (continued...)

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## Scaling is not as easy

- 50% of the cases: bespoke changes to the software to keep each client happy
- Deploying products, training algorithms, adapting to clients circumstances takes more time than expected
- Scaling is not super-linear

## Moats

- The playbook is still being written
- AI is just software. Difficult to come up with something radically new

# So, what can you do?

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Eliminate *model complexity* as much as possible

Choose problem domains carefully – and often narrowly – to reduce *data complexity*

Plan for high variable costs

Embrace services

Plan for change in the tech stack

Build defensibility the old-fashioned way

# Thank you

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Questions?