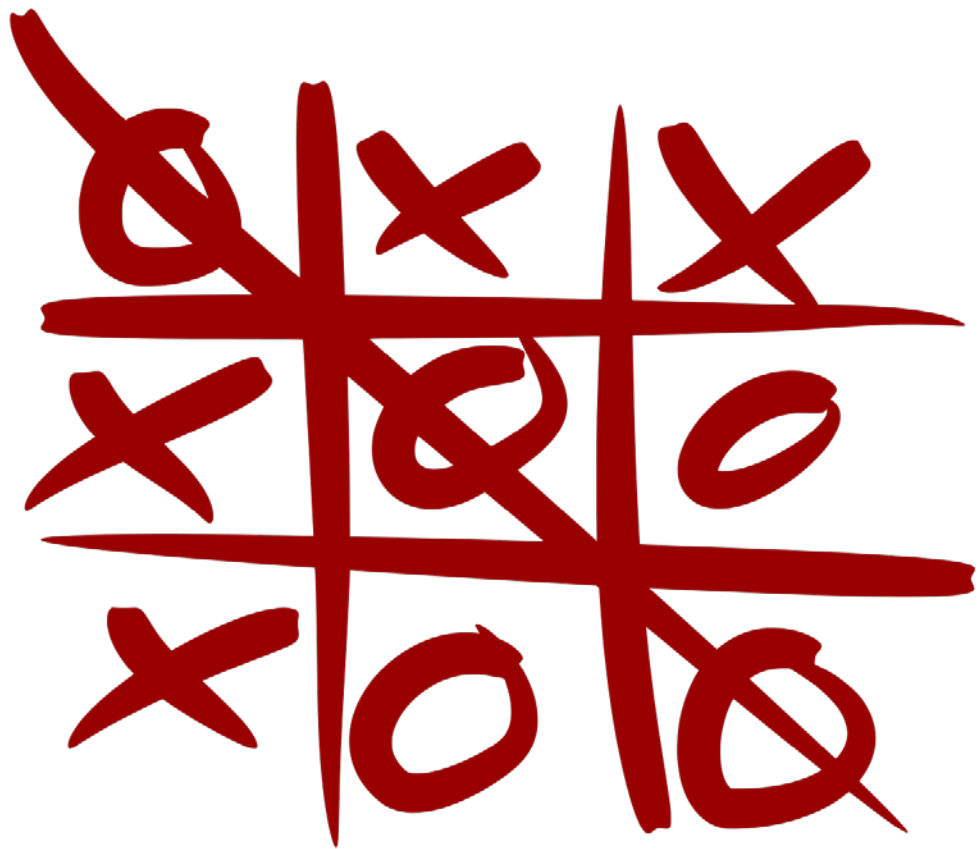




Machine learning for marketers

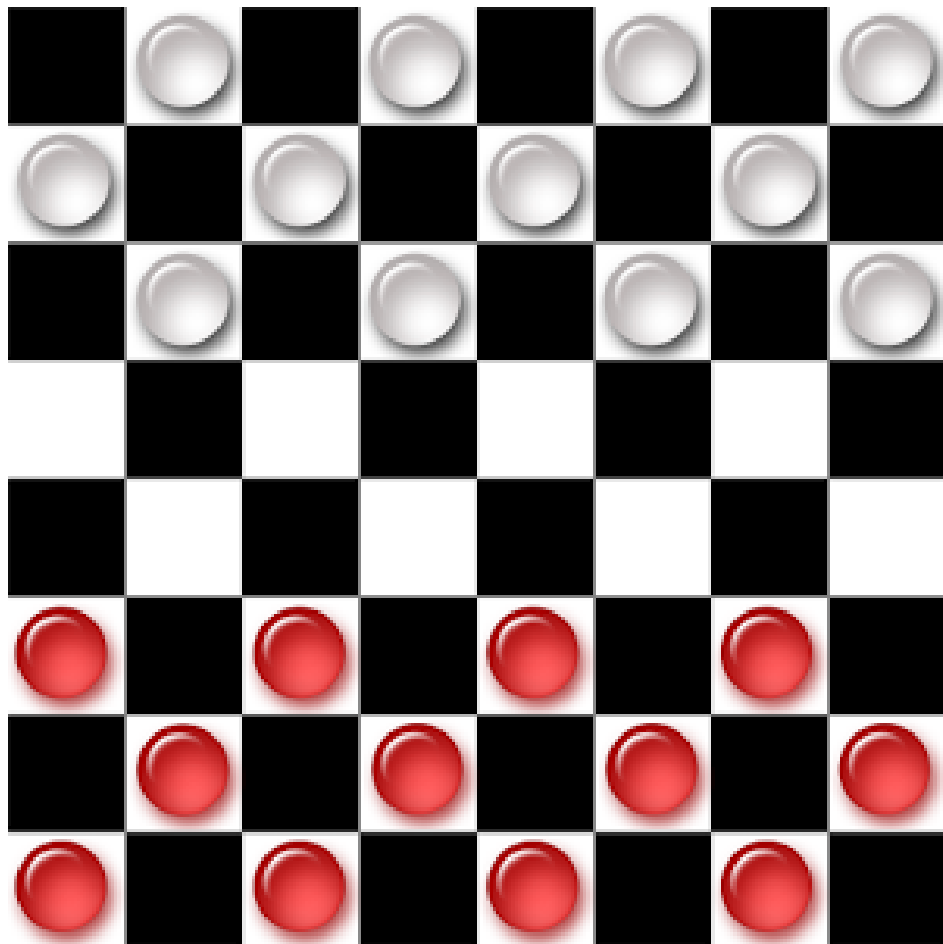
October 10, 2017

MACHINE LEARNING



255K

1952



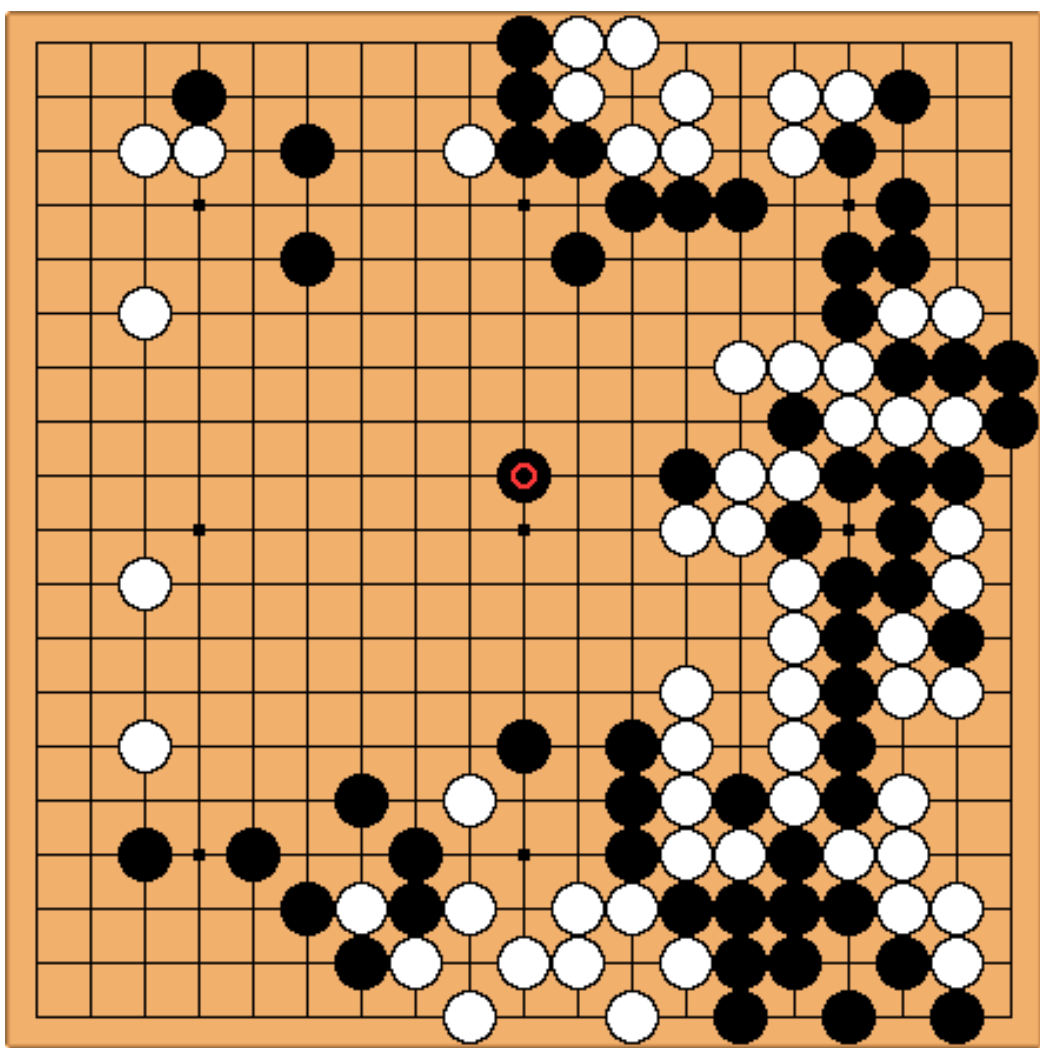
10^{18}

1994



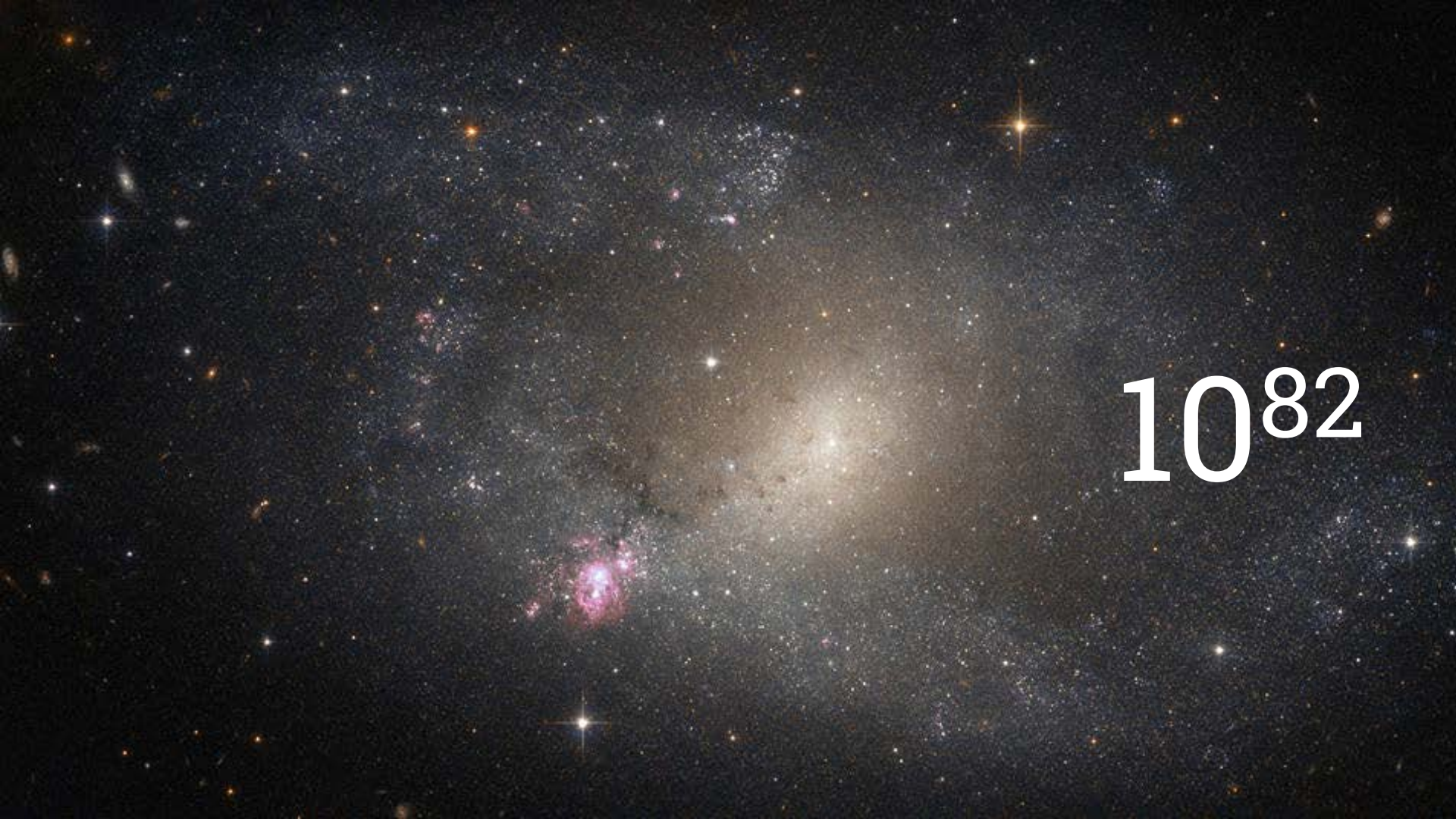
10^{120}

1996



10^{175}

2017



10^{82}



VIDEO COMPUTER SYSTEM™

POWER

TV TYPE

GAME SELECT

GAME RESET

COLOR

B-W





Perfect information

Tech News [Home > Tech > Tech News](#)

Tuesday, 30 May 2017 | MYT 12:37 PM

Google's AlphaGo retires on top after humbling world No 1



AlphaGo defeated brash 19-year-old world number one Ke Jie of China on May 27 to sweep a three-game series that was closely watched as a measure of how far AI has come. — AFP

Imperfect information

Artificial Intelligence Demonstrates High Performance Against Human Poker Players

[Hannah Wallace](#) [14th August 2017 10:07 am](#)



Gone are the days when artificial intelligence was only a figment of someone's imagination or an entity in science fiction. Nowadays it is a very real entity and it has a wide variety of applications in our everyday life. **Such is the case with artificial intelligence in the world of gambling which never ceases to amaze even its developers.**

Recently some of the world's best Dota 2 players were destroyed by an AI bot developed by OpenAI, one of the many projects of Elon Musk. But this technology finds its way in the poker field as well. **Two of the most famous AI programs, DeepStack and Libratus,** have left a lasting impression on professional poker players who have spent years in the field, as well as card game experts of all ages.

This spring saw the first win of an AI program over a human poker player, which totally changed the way people perceive artificial intelligence. The AI dominated the field in the poker game Texas Hold'em after only 20 days of play at a casino in Pittsburgh, Pennsylvania. The bot managed to top them by more than \$1.7 million in chips and all four of its human opponents finished the game with a negative number of chips.

BUSINESS EXAMPLES



8% of drivers cause car accident every year

1% of car accidents damage greater \$10K

78% accuracy



4M miles on the road

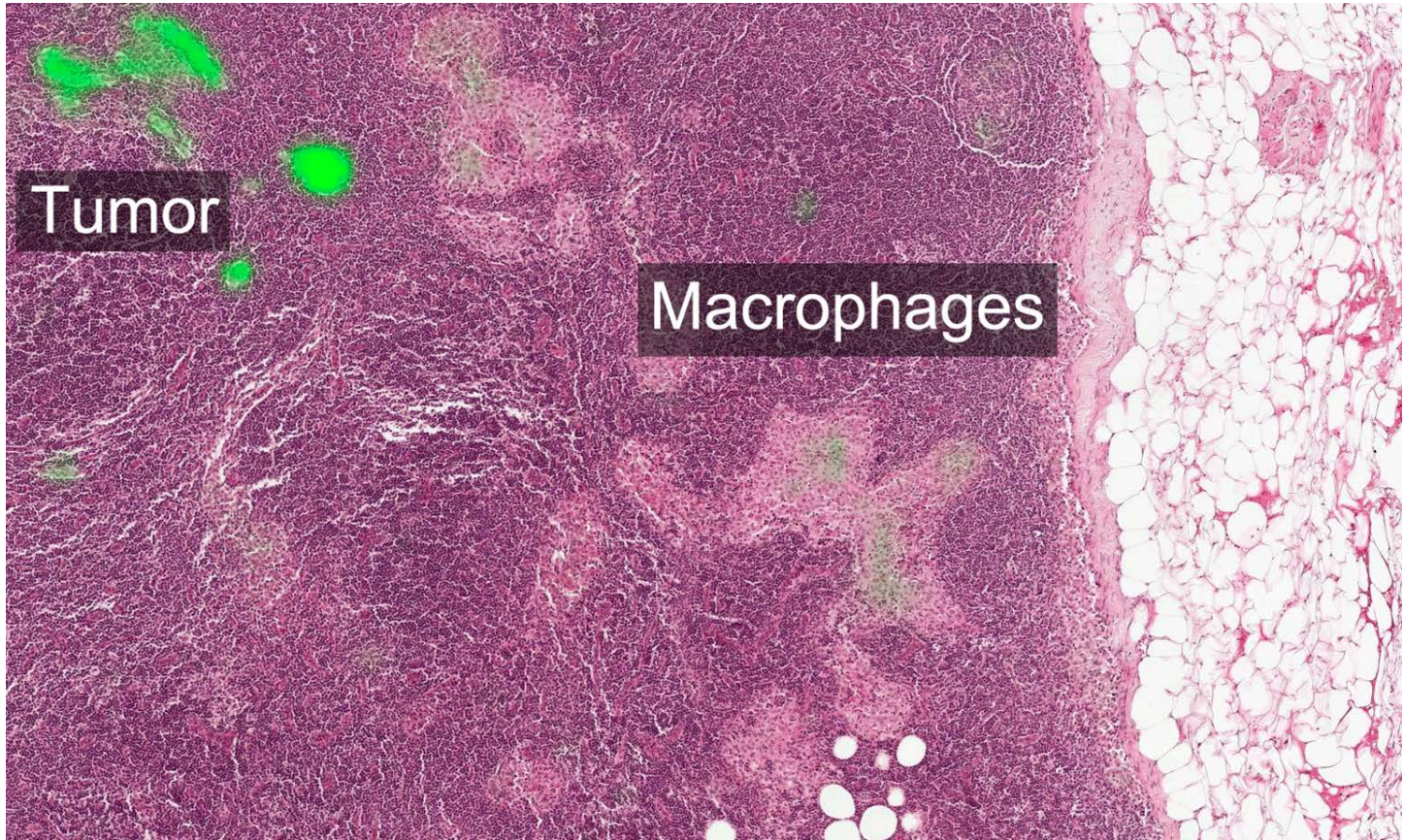
2B miles virtual - 500% improvement





Tensor Processing Units





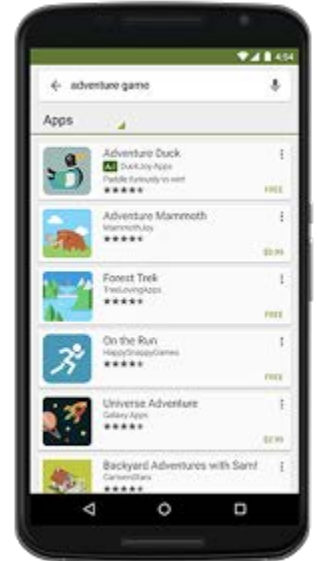
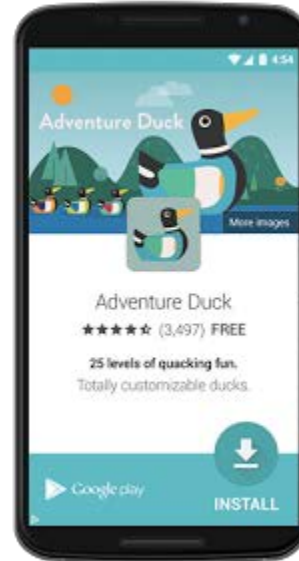
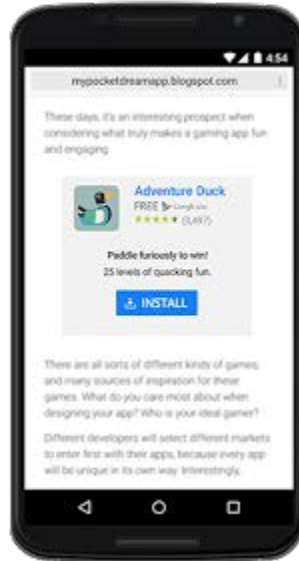
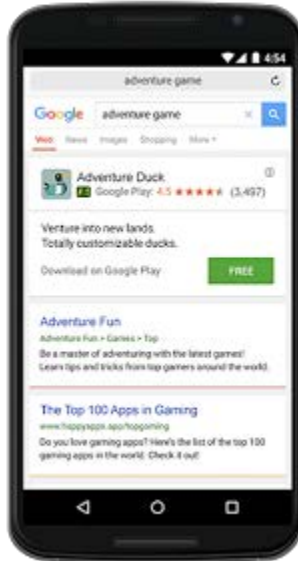
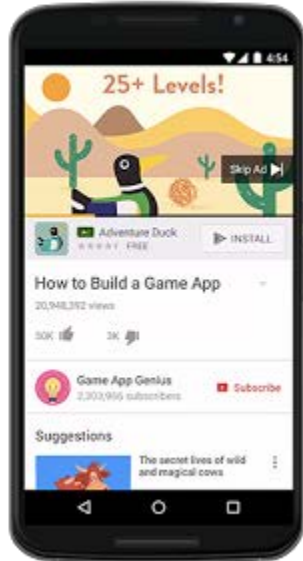
Outperforms by 16%

AUTOMATED MARKETING

“OK Google, help me improve my business”

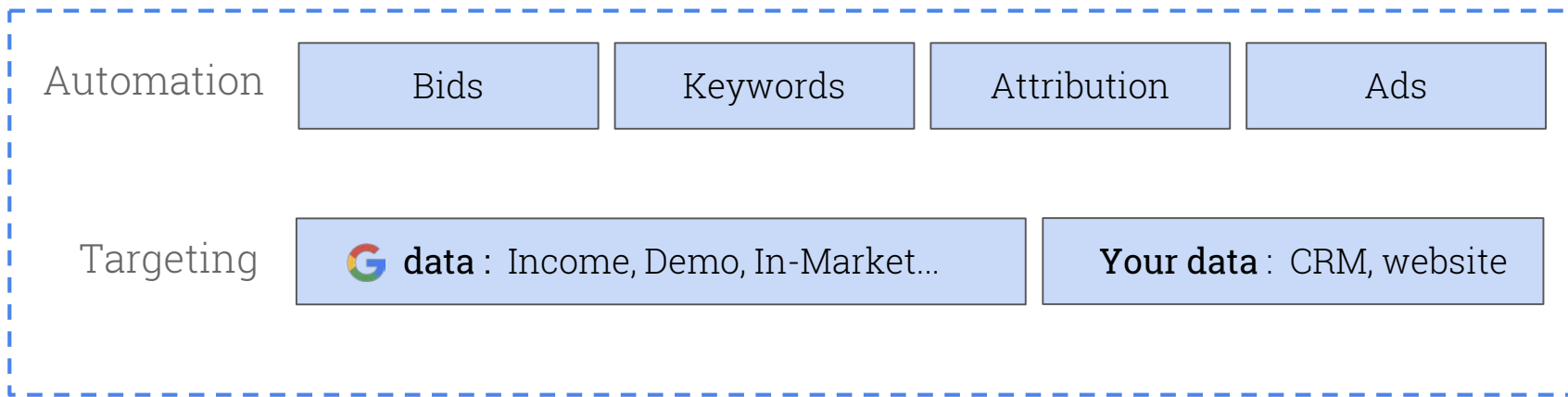


Fully-automated advertising for Apps



Semi-automated advertising for core search

Search machine learning stack



MARKETING APPLICATIONS

#1 - Bid to individual customer profitability

Customer	Search	Today's Revenue	Bid	Next 2 years Revenue	Total Revenue	Bid
A	White socks	\$20	\$	+\$30	\$50	\$
B	Silk socks	\$20	\$	+\$230	\$250	\$\$\$\$\$

Australian travel company

Customer A:

- Paid \$9,000 for a luxury cruise
- On honeymoon

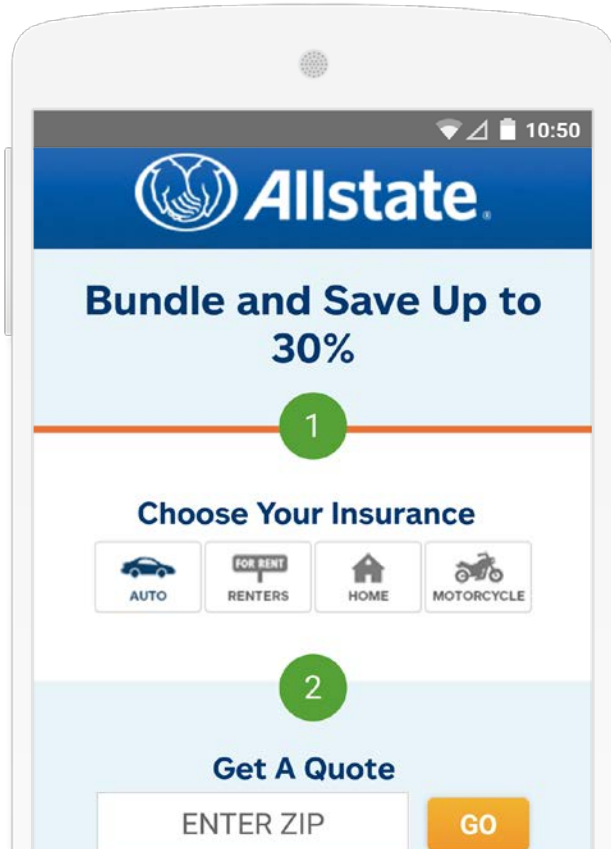
Customer A future LTV = \$4,500

Customer B:

- Paid \$1,500 for standard cabin
- 67 year old retired couple

Customer B future LTV = \$30,000

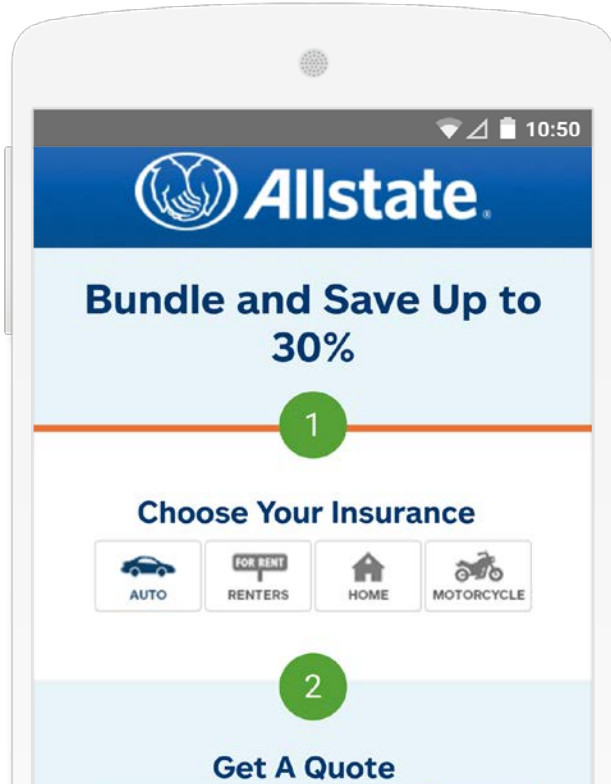
#2 - Increase loyalty



40%

Lower churn of customers
searching for competitors

#3 - Increase x-selling



4X cheaper

To cross-sell new product to existing customer than acquire new one

SUMMARY OF ADVICE

1- Automate **search**

2- Acquire the **best customers**

3- Improve **loyalty and x-selling**