

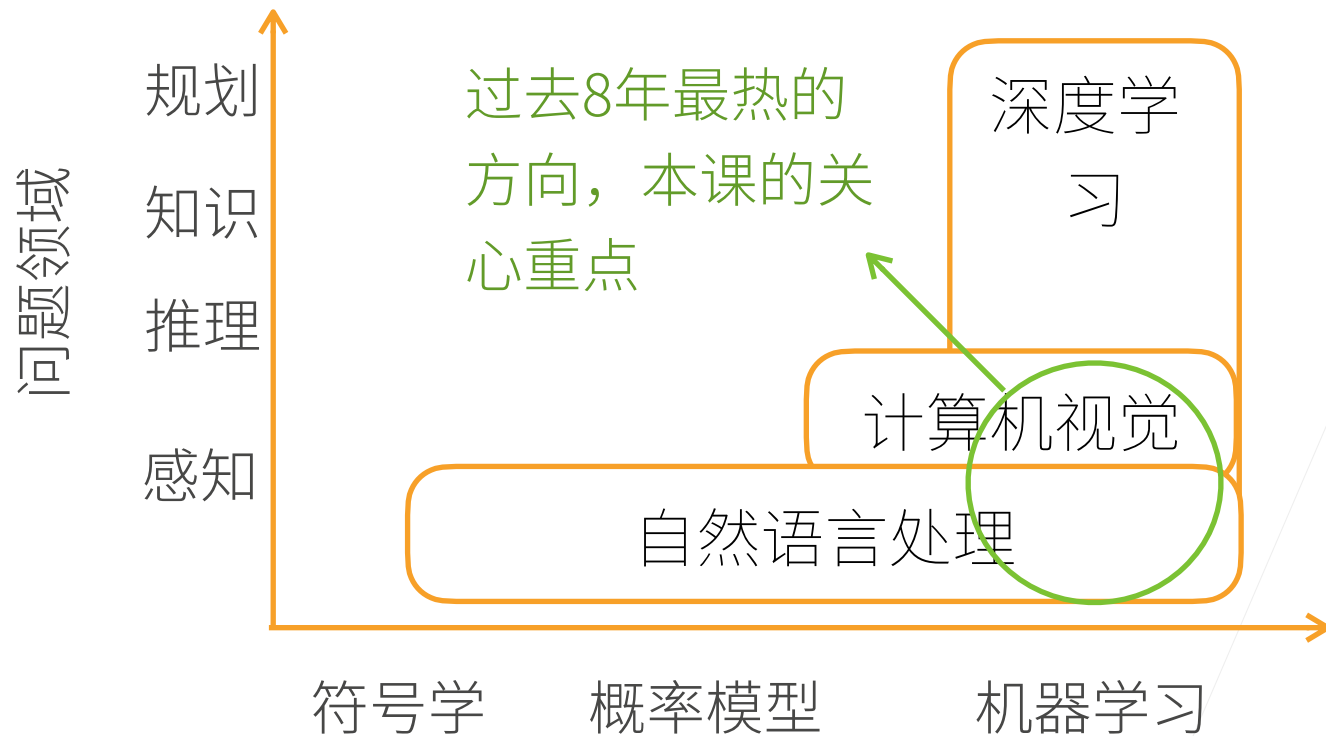
# 深度学习介绍

动手学深度学习 v2

李沐 • AWS



# AI 地图



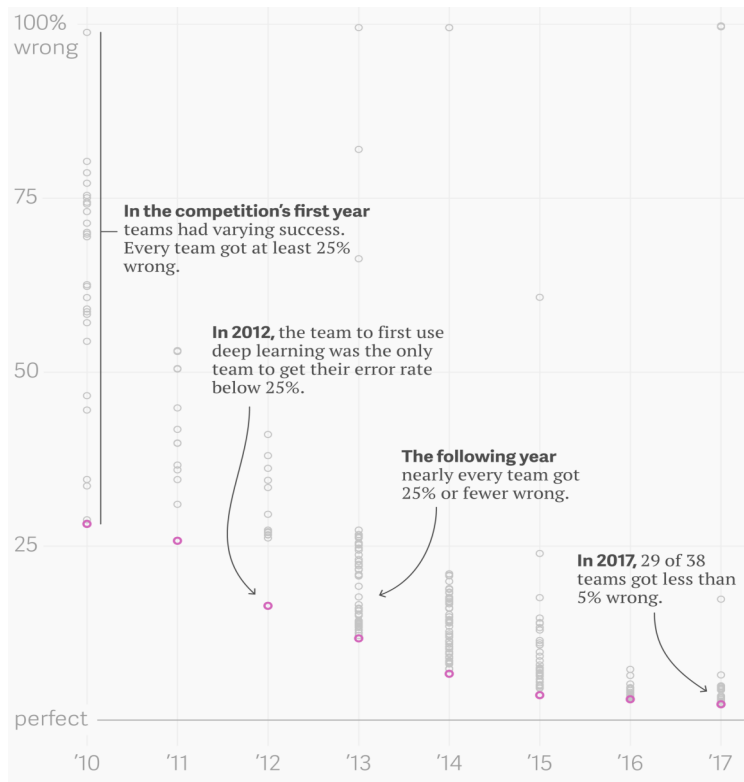
# 图片分类



<http://www.image-net.org/>



# 图片分类



<https://qz.com/1034972/the-data-that-changed-the-direction-of-ai-research-and-possibly-the-world/>

# 物体检测和分割



[https://github.com/matterport/Mask\\_RCNN](https://github.com/matterport/Mask_RCNN)



# 样式迁移



# 人脸合成



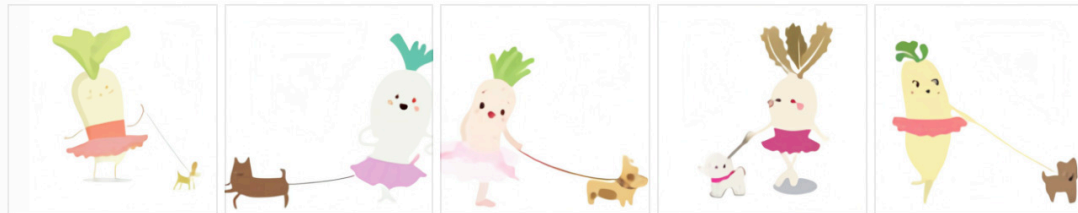
# 文字生成图片



TEXT PROMPT

an illustration of a baby daikon radish in a tutu walking a dog

AI-GENERATED IMAGES



TEXT PROMPT

an armchair in the shape of an avocado [...]

AI-GENERATED IMAGES



<https://openai.com/blog/dall-e/>





## Q: How to run an Effective Board Meeting

### Step 1: Spend time building an effective board

Startup boards typically include one or more founders representing the common shareholders of the financing round), and one or more independent board directors. Importantly, these independent directors are often a critical part of their pitch decks. Board directors have more reputational skin in the game, actual legal liability, and provide critical feedback to the CEO.

Most founders I've met don't appreciate the significant impact that high quality board members can have on a startup. High quality, however that's not always entirely in your control, since it's dependent on how hot you are and how you're picking you. The quality of your independent board members is far more in your control. It can take time to find a good board member but the effort is absolutely worth it.

When you start recruiting independent board members can vary from startup to startup, I typically recommend you can delay it if your current board is decent enough and covers the areas of knowledge critical to your startup.

A while back, one of the startups we'd invested in had seen some early success with large enterprise customers but then encountered some really tough challenges. Mostly because the DNA of the founders was primarily focused on spinning their wheels and rotating through heads of sales, the founders decided to try and accelerate their growth by hiring an expert in enterprise sales. The effects were immediate. Within weeks they were making headway on sales and the team delivering results. Over the following few years, this independent board member was critical to the success of the startup.

Founders also tend to not realize they can stretch even higher in recruiting board members than in recruiting sales. It is incredibly flattering, a relatively low time commitment, and the topic can be broached with very little risk. You can shoot for the stars. Typically compensation for an external board member like this should be tailored to the current stage, with immediate monthly vesting; no cliff.]

Here's #gpt3 writing some SQL for me.

Text: Select the "Students" from the "School" table joined

```
Code: SELECT * FROM Students  
INNER JOIN Class  
ON Students.ID = Class.StudentID
```

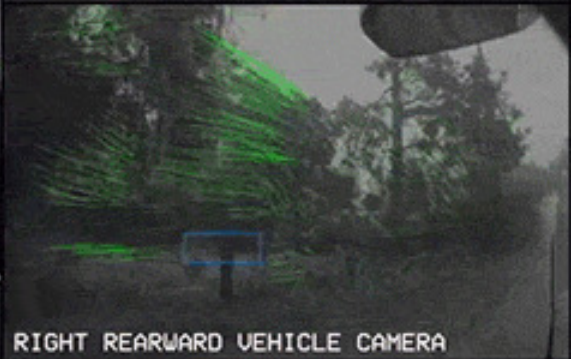
# 无人驾驶



LEFT REARWARD VEHICLE CAMERA



MEDIUM RANGE VEHICLE CAMERA



RIGHT REARWARD VEHICLE CAMERA

MOTION FLOW

LANE LINES

LANE LINES

ROAD FLOW

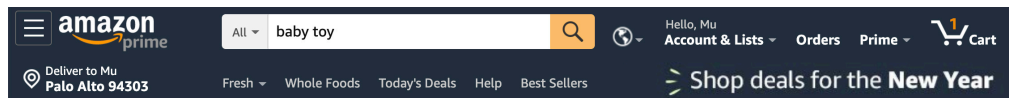
IN-PATH OBJECTS

ROAD LIGHTS

OBJECTS

ROAD SIGNS

# 案例研究 — 广告点击



1-48 of over 30,000 results for "baby toy"

Sort by: Featured

## Amazon Prime

- ☐ Prime
- ☒ Prime | FREE Same-Day

Get FREE Same-Day Delivery on qualifying orders over \$35

## Delivery Day

- ☐ Get It Today
- ☐ Get It by Tomorrow

## Pantry

- ☐ Prime Pantry

## Prime Wardrobe

- ☐ Prime Wardrobe

## Local Stores

- ☐ Amazon Fresh
- ☐ Whole Foods Market

## Department

- Toys & Games
  - Baby & Toddler Toys
  - Baby Musical Toys
  - Stuffed Animals & Plush Toys
  - Baby Rattles & Plush Rings
  - Baby Activity Play Centers
  - See more

## Baby Products

- Baby Teether Toys
- Baby Bibs
- Baby Toothbrushes
- Baby Health Care Products

## Books

- Children's Vocabulary & Spelling Books
- Children's Basic Concepts Books



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Similac Pro-Advance Non-GMO Infant Formula with Iron, wit...  
★★★★★ 428  
prime



Similac Pro-Total Comfort Infant Formula OPTI-GRO, N...  
★★★★★ 188  
prime

[Ad feedback](#)

Price and other details may vary based on size and color



Sponsored ⓘ  
Baby Einstein Magic Touch Mini Piano Wooden Musical Toy, 3 Months +  
★★★★★ ~658  
\$9.99



Sponsored ⓘ  
Splashin'kids Infant Toys Beginner Crawler Game Ball Drop Maze Tummy Time Activity Center Early Development Jum...  
★★★★★ ~81



Sponsored ⓘ  
iPlay, iLearn 5 Dinosaur Baby Rattles, Teether, Shaker, Grab and Spin Rattle, Musical Toy Set, Early Educational Toys, Unique Gifts...  
★★★★★ ~84

4 stars and above Sponsored

Page 1 of 3



TOP BRIGHT Toddler Toys For 1 2 Year Old Boy And Girl Gifts Wooden Race Track Car R...  
★★★★★ 875  
\$21.99 -prime



HOMOFY Homof Baby Toys Musical Learning Table 6 Months Up-Early Education Music Act...  
★★★★★ 155  
\$26.99 -prime



RenFox Kids Musical Mats, Music Piano Keyboard Dance Floor Mat Carpet Animal Blanke...  
★★★★★ 218  
\$26.99 -prime



fisca 3 in 1 Musical Instruments Toys, Electronic Piano Keyboard Xylophone Drum Set...  
★★★★★ 117  
\$36.99 -prime



LIGHTDESIRE Baby Toys Musical Caterpillar, Infant Toys Crinkle Rattle Soft with Rin...  
★★★★★ 219  
\$15.89 -prime

[Ad feedback](#)

Sponsored products related to this item

Page 1 of 254



Baby Einstein Magic Touch Curiosity Tablet Wooden Musical Toy, 6 Months +  
★★★★★ 25  
\$19.99 -prime



BAOLI Baby Bear Bell Toy Music Song Light (Colors May Vary Pink/Green/Yellow)  
★★★★★ 11  
\$9.99 -prime



london-kate Wooden Musical Table - Xylophone, Drum, Maraca and 2 Beaters  
★★★★★ 1  
\$27.58 -prime



Woby Multifunctional Musical Elephant Keyboard Piano Educational Learning Light Up ...  
★★★★★ 8  
\$19.98 -prime



NextX Baby Toys 6 to 12 Months Infant Musical Learning Toys  
★★★★★ 212  
\$26.99 -prime

[Ad feedback](#)



# 案例研究 — 广告点击



触发





点击率预估

排序 (点击率  $\times$  竞价)




 Baby Einstein Magic Touch Curiosity Tablet Wooden Musical Toy, 6 Months + ★★★★★ 25 \$19.99 <small>prime</small>	 BADLI Baby Bear Bell Toy Music Song Light (Colors May Vary) Pink/Green/Yellow ★★★★★ 11 \$9.99 <small>prime</small>	 London-kate Wooden Musical Table - Xylophone, Drum, Maraca and 2 Beaters ★★★★★ 1 \$27.58 <small>prime</small>	 Woby Multifunctional Musical Elephant Keyboard Piano Educational Learning Light Up ... ★★★★★ 8 \$19.98 <small>prime</small>
 RenFox Kids Musical Mats, Music Piano Keyboard Dance Floor Mat Carpet Animal Blankie... ★★★★★ 218 \$26.99 <small>prime</small>	 fisca 3 in 1 Musical Instruments Toys, Electronic Piano Keyboard Xylophone Drum Set... ★★★★★ 117 \$36.99 <small>prime</small>	 LIGHTDESIRE Baby Toys Musical Caterpillar, Infant Toys Crinkle Rattle Soft with Rin... ★★★★★ 219 \$15.89 <small>prime</small>	 Playskool Explore 'N Grow Busy Gears (Amazon Exclusive) ★★★★★ 746 \$21.49 <small>prime</small>

$p = 0.11$     $p = 0.08$     $p = 0.03$     $p = 0.02$

 Baby Einstein Magic Touch Curiosity Tablet Wooden Musical Toy, 6 Months + ★★★★★ 25 \$19.99 <small>prime</small>	 BADLI Baby Bear Bell Toy Music Song Light (Colors May Vary) Pink/Green/Yellow ★★★★★ 11 \$9.99 <small>prime</small>	 London-kate Wooden Musical Table - Xylophone, Drum, Maraca and 2 Beaters ★★★★★ 1 \$27.58 <small>prime</small>	 Woby Multifunctional Musical Elephant Keyboard Piano Educational Learning Light Up ... ★★★★★ 8 \$19.98 <small>prime</small>
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$p = 0.06$     $p = 0.12$     $p = 0.02$     $p = 0.04$

 RenFox Kids Musical Mats, Music Piano Keyboard Dance Floor Mat Carpet Animal Blankie... ★★★★★ 218 \$26.99 <small>prime</small>	 fisca 3 in 1 Musical Instruments Toys, Electronic Piano Keyboard Xylophone Drum Set... ★★★★★ 117 \$36.99 <small>prime</small>	 LIGHTDESIRE Baby Toys Musical Caterpillar, Infant Toys Crinkle Rattle Soft with Rin... ★★★★★ 219 \$15.89 <small>prime</small>	 Playskool Explore 'N Grow Busy Gears (Amazon Exclusive) ★★★★★ 746 \$21.49 <small>prime</small>
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<div style="border: 2px solid orange; padding: 5px;"> <p><b>\$2.2</b> <math>p = 0.11</math></p>           Baby Einstein Magic Touch Curiosity Tablet Wooden Musical Toy, 6 Months +          ★★★★★ 25          \$19.99 <small>prime</small> </div>	<div style="border: 2px solid orange; padding: 5px;"> <p><b>\$4.2</b> <math>p = 0.08</math></p>           BADLI Baby Bear Bell Toy Music Song Light (Colors May Vary) Pink/Green/Yellow          ★★★★★ 11          \$9.99 <small>prime</small> </div>	<p><b>\$1.2</b> <math>p = 0.03</math></p>  London-kate Wooden Musical Table - Xylophone, Drum, Maraca and 2 Beaters ★★★★★ 1 \$27.58 <small>prime</small>	<p><b>\$3.2</b> <math>p = 0.02</math></p>  Woby Multifunctional Musical Elephant Keyboard Piano Educational Learning Light Up ... ★★★★★ 8 \$19.98 <small>prime</small>
<p><b>\$2.9</b> <math>p = 0.06</math></p>  RenFox Kids Musical Mats, Music Piano Keyboard Dance Floor Mat Carpet Animal Blankie... ★★★★★ 218 \$26.99 <small>prime</small>	<div style="border: 2px solid orange; padding: 5px;"> <p><b>\$3.2</b> <math>p = 0.12</math></p>           fisca 3 in 1 Musical Instruments Toys, Electronic Piano Keyboard Xylophone Drum Set...          ★★★★★ 117          \$36.99 <small>prime</small> </div>	<p><b>\$3.4</b> <math>p = 0.02</math></p>  LIGHTDESIRE Baby Toys Musical Caterpillar, Infant Toys Crinkle Rattle Soft with Rin... ★★★★★ 219 \$15.89 <small>prime</small>	<div style="border: 2px solid orange; padding: 5px;"> <p><b>\$6.2</b> <math>p = 0.04</math></p>           Playskool Explore 'N Grow Busy Gears (Amazon Exclusive)          ★★★★★ 746          \$21.49 <small>prime</small> </div>

# 预测与训练



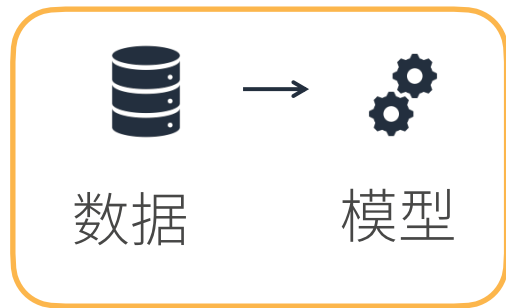
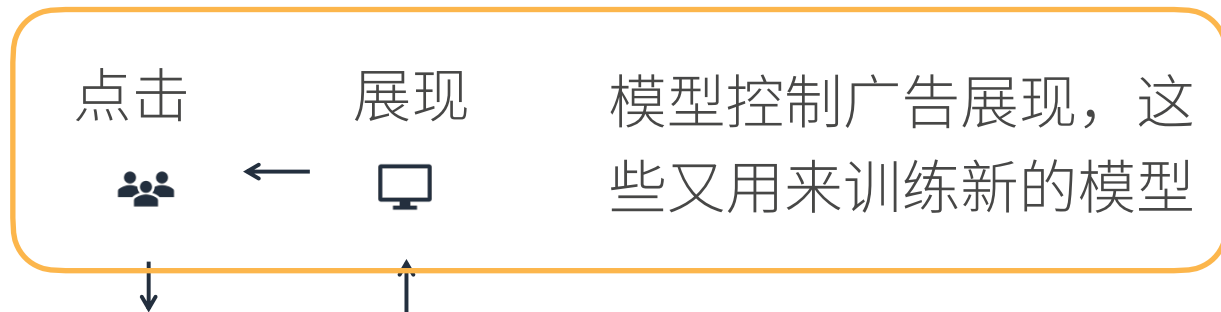
训练数据  
(过去广告展现和用户点击)



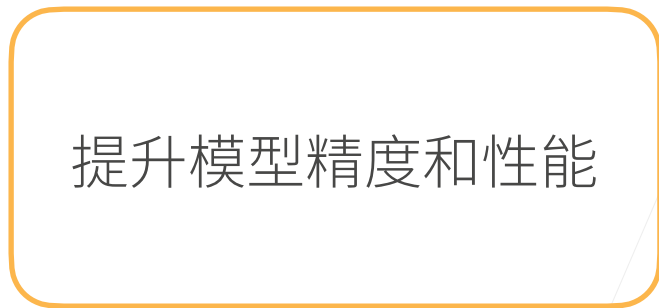
# 完整的故事



领域专家



数据科学家



AI 专家