

Amazon Ads Optimization

with Gradient Boosting Regression
(scikit-learn) and Time Series (Prophet)

by Julia Sokolova





Gund Bears 'Maxie' Teddy Bear Plush

★★★★★ ∨ 263

\$37¹⁶ ~~\$39.99~~

Get it as soon as **Wed, Jul 22**
FREE Shipping by Amazon

More Buying Choices
\$29.99 (12 used & new offers)

Ages: 4 - 5 years



Sponsored ⓘ

Vermont Teddy Bear Stuffed Animals - 18 Inch, Almond Brown, Super Soft

★★★★★ ∨ 951

\$30⁹⁹

Get it as soon as **Wed, Jul 22**
FREE Shipping by Amazon

Ages: 0 months and up



Sponsored ⓘ

Vermont Teddy Bear Stuffed Animals - Oh So Soft Puppy Dog Stuffed Animal, Brown, 18 inch

★★★★★ ∨ 620

\$39⁹⁹

Get it as soon as **Wed, Jul 22**
FREE Shipping by Amazon

Ages: 0 months and up



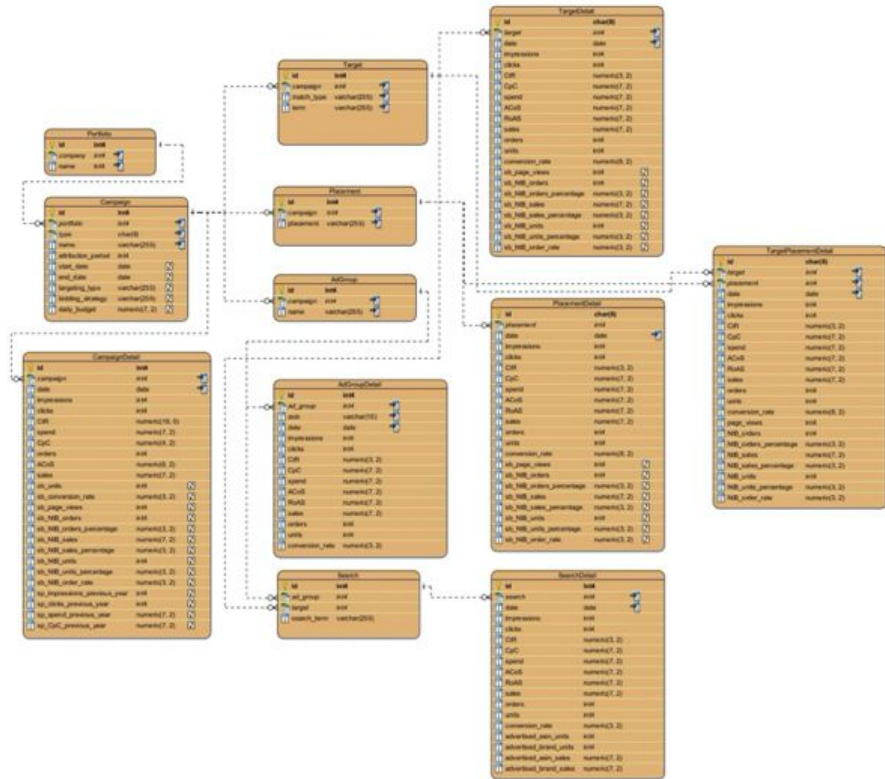
Project scope: find best practices of advertising at Amazon



1. How are we doing now?
2. What can we do better?
3. If we spend additional \$10K on ads, what will be the result?

Data

- MySQL DB in AWS
- 13 tables
- 104 campaigns
- Aug 19 - Feb 20



Impressions: 10M

Clicks: 23K

Spend: \$32K

Sales: \$92K

ROI: 2.875



Ways to optimize: campaign type

	type	impressions	clics	spend	sales	orders	units	ROI
0	SB	271184	1912	1481.16	10451.11	533	741.0	7.056030
1	SP	9754111	21789	30738.75	81728.68	5224	0.0	2.658816
2	SD	8459	45	40.49	59.89	3	0.0	1.479131

Recommendation: invest more in brand advertising



Ways to optimize: targeting

	targeting_type	impressions	clicks	spend	sales	orders	units	ROI
0	Manual targeting	8000854	19466	27562.25	75983.39	4960	0.0	2.756792
1	Automatic targeting	1753257	2323	3176.50	5745.29	264	0.0	1.808686



Ways to optimize: placement

	type	placement_type	impressions	clicks	spend	sales	orders	units	ROI
0	SB	Other Placements	152156	223	111.99	1380.82	52	96	12.329851
1	SB	Top of Search	148690	2249	1743.47	12331.69	578	823	7.073073
2	SP	First page Top of Search on Amazon	108655	3093	4301.34	18568.96	1119	1580	4.317017
5	SP	Rest of search on Amazon	1021963	3403	3974.47	8282.33	753	970	2.083883
3	SP	Product pages on Amazon	3028248	3736	6157.14	6735.95	531	657	1.094006
4	SP	Remarketing off-Amazon	78994	92	38.81	30.72	3	4	0.791549

Recommendations: Brand Ads

- Add budget
- Use manual bidding
- Placement type: choose 'other places'

The screenshot shows the Amazon search results for 'baby care'. A hand-drawn orange oval highlights the 'SPONSORED BY JACK & JILL' section, which includes the tagline 'Caring for your little ones has never been easier.' and three product listings: Jack & Jill Diapers, Jack & Jill Baby Sunscreen Cream, and Jack & Jill Baby Sunscreen Cream. Below this, other sponsored products are visible, including the iBaby WiFi Baby Monitor M7 Lite and the Baby Diaper Bag Backpack. The left sidebar shows various filters like 'Baby Products', 'Books', 'Apps & Games', and 'Prime Wardrobe'.

amazon baby care

New Year New You

1-16 of over 200,000 results for 'baby care' Report a search issue

Sort by Featured

Show results for

Baby Products
Baby Gyms & Playmats
Baby Grooming & Health Kits
Baby Playsets
Baby Care Products
Baby Care Gift Sets
Soft Baby Carriers
Health & Household
Baby & Child Care Products
Baby Bathing Products

Books
Baby & Toddler Parenting
Parenting
Parenting & Family Reference
Pediatric Perinatology & Neonatology

Apps & Games
Kids
Role Playing Games
See All 26 Departments

Refine by

Subscribe & Save
☐ Subscribe & Save Eligible

Amazon Prime
☒ prime

Eligible for Free Shipping
☐ Free Shipping by Amazon

Pantry
☐ prime pantry

Prime Wardrobe
☐ prime wardrobe

SPONSORED BY JACK & JILL
Caring for your little ones has never been easier.
Shop now

Jack & Jill Diapers, Size 4T, 162-count
★★★★☆ 246
prime

Jack & Jill Baby Sunscreen Cream, All Natural, SPF 30
★★★★☆ 252
prime

Jack & Jill Baby Sunscreen Cream, All Natural, SPF 60
★★★★☆ 341
prime

Sponsored
iBaby WiFi Baby Monitor M7 Lite, Smart Baby Care System 1080p Video Camera with Wi-Fi Speakers, Thousands of Lullabies & Bed Stories, Growing Timeline, Motion & Sound Alerts for Android and iOS
by iBaby
\$149.00 \$179.95
prime
FREE Shipping on eligible orders
★★★★☆ 24

Sponsored
Baby Diaper Bag Backpack, Baby Bag, Multi-Function Waterproof Travel Nappy Bag for Baby Care, Large Capacity, Durable and Stylish Changing Bag for Mom and Dad (B Grey)
by AISPARRY
\$28.79
prime
FREE Shipping on eligible orders
★★★★☆ 20
Save 10% with coupon

Baby Care Play Mat (Large, Busy Farm)
by Baby Care
\$119.95
★★★★☆ 415

Recommendations: Product Ads

- Target 'First page, top search' placement
- Use manual bidding

The screenshot shows the Amazon search results page for 'teddy bear'. The top navigation bar includes the Amazon logo, a search bar with 'teddy bear', and links for account, orders, and cart. Below the navigation bar, a banner indicates '1-24 of over 1,000 results for Toys & Games: "teddy bear"'. The left sidebar contains filters for category, brand, and age range. The main content area displays several product listings. A large orange circle highlights a sponsored product ad for 'Vermont Teddy Bear Amazon Exclusive Soft Cuddly Bear Stuffed Animals and Teddy, Pink, 15 inches' priced at \$29.99. Other visible products include 'Classic cute & cuddly bears' and 'Joyfay 78" Giant Teddy Bear Dark Brown Valentine's Gift'.

amazon

All teddy bear

Discover small & medium businesses

EN Hello, Sign in Account & Lists Orders Try Prime Cart

1-24 of over 1,000 results for Toys & Games: "teddy bear"

Show results for

- Any Category
- Toys & Games
- Stuffed Animals & Teddy Bears
- Stuffed Animal Clothing & Accessories
- Plush Pillows
- Grown-Up Toys
- See more

Refine by

Amazon Prime

prime

Eligible for Free Shipping

Free Shipping by Amazon

Brand

- Vermont Teddy Bear
- GLUND
- HollyHOME
- Stuffed Toys Shop
- The Bear Mill
- BEA Regards Comfort Bears
- Teddy Mountain
- Bear Factory
- Animaland

See more

Toys Interest

Animals & Nature

Fantasy & Sci-Fi

Occupations

Sports

Toys Age Range

- Birth to 24 Months
- 2 to 4 Years
- 5 to 7 Years

SPONSORED BY VERMONT TEDDY BEAR

Classic cute & cuddly bears

Shop now

Vermont Teddy Bear - Amazon Exclusive Big Stuffed Animal Teddy Bear, 3 Feet Tall, Brown

★★★★★ 43

Vermont Teddy Bear - Fuzzy Soft & Cuddly Bear, 18 inches, Brown

★★★★★ 83

prime

Vermont Teddy Bear Amazon Exclusive Soft Cuddly Bear Stuffed Animals and Teddy, Bro...

★★★★★ 139

prime

Showing results in Toys & Games. Show instead results in All Departments.

Advertisement

See Color Options

Vermont Teddy Bear Amazon Exclusive Soft Cuddly Animals and Teddy, Brown, 15 inches

\$29.99

prime

Get it by Tomorrow, Oct 31

FREE Shipping on eligible orders

Manufacturer recommended age: 0 Month - 8 Years 4 Months

Show only Vermont Teddy Bear items

★★★★★ 140

See Color Options

Vermont Teddy Bear Amazon Exclusive Soft Cuddly Bear Stuffed Animals and Teddy, Pink, 15 inches

\$29.99

prime

Get it by Thu, Nov 1

Only 8 left in stock - order soon.

FREE Shipping on eligible orders

Manufacturer recommended age: 0 Month - 8 Years 4 Months

Show only Vermont Teddy Bear items

★★★★★ 139

SPONSORED

Joyfay 78" Giant Teddy Bear Dark Brown Valentine's Gift

\$114.99

FREE Shipping on eligible orders

Show only Joyfay items

★★★★★ 88

FREE Shipping on eligible orders

Manufacturer recommended age: 0 Month - 8 Years 4 Months

Show only Vermont Teddy Bear items

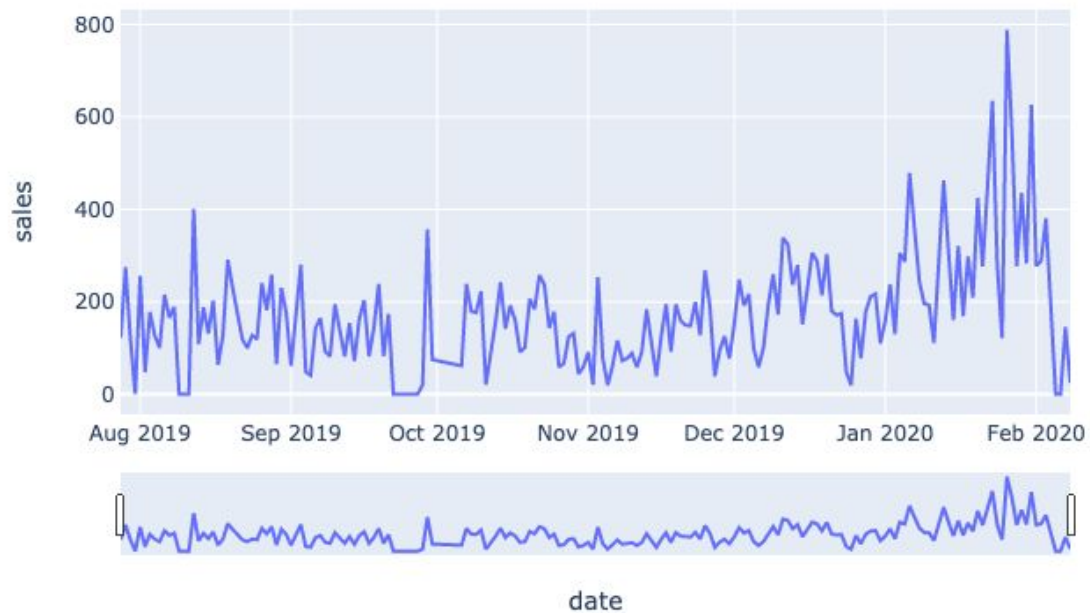
★★★★★ 139



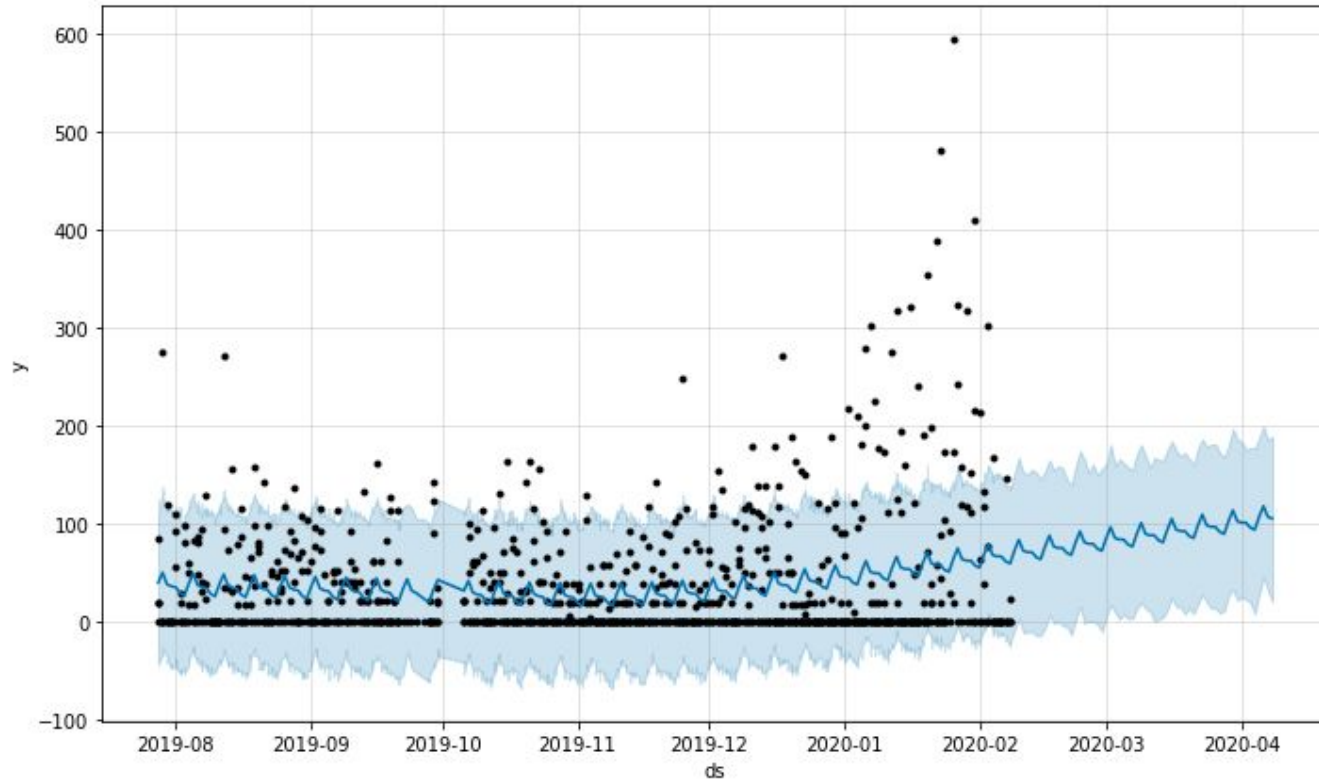
**What product(s) should
we advertise?**



Sales: product A

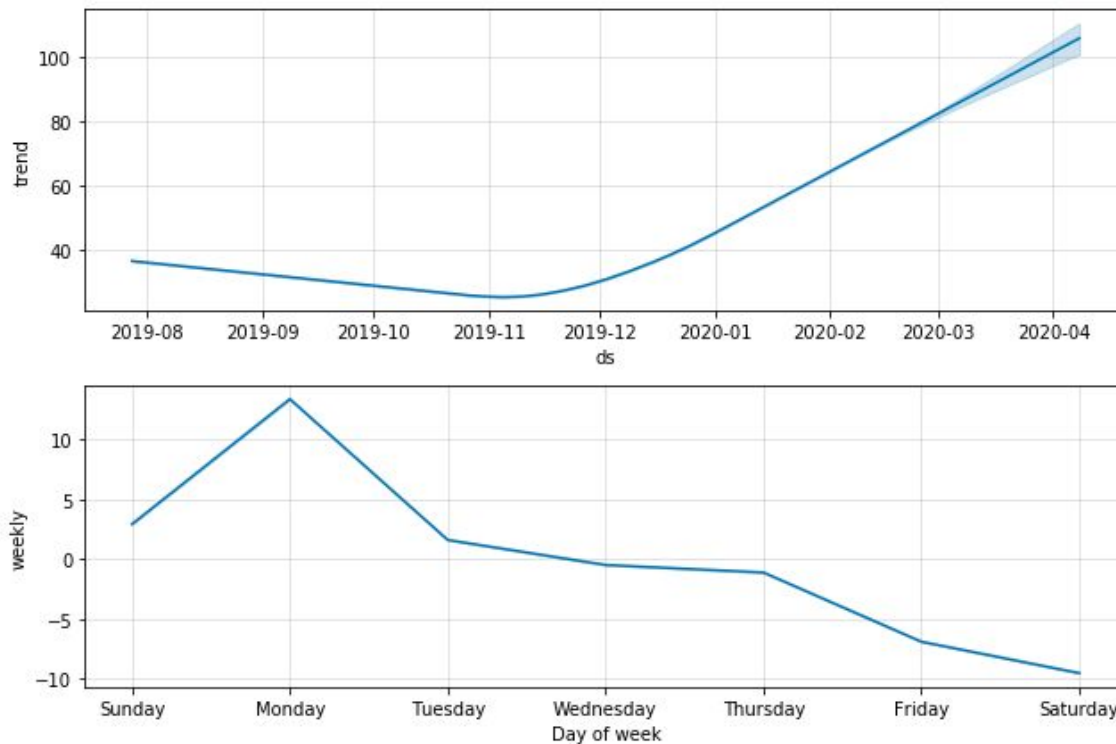


Sales forecast: product A





Sales forecast: product A

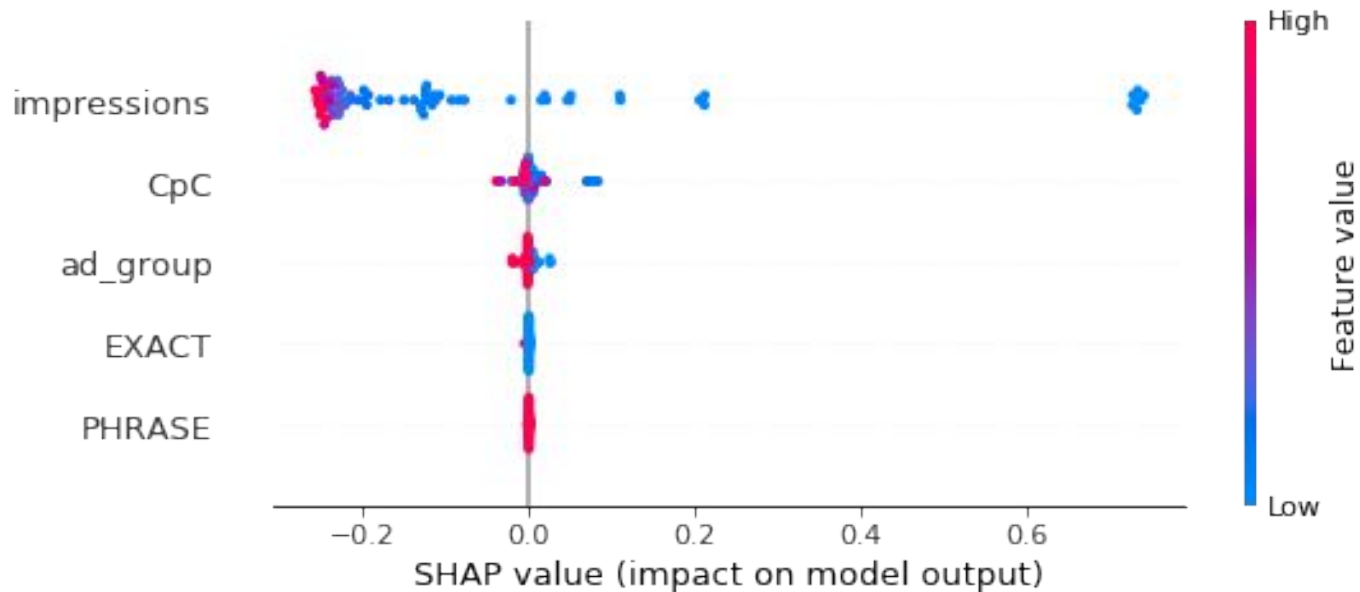




**How do we advertise
those products?**



Ads parameters effect on product A sales (with SHAP Values)





Thank you

