

Distinctions in Amazon Product Advertising and Pricing

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Problem Statement and Goals

- ❖ Expose the oversaturation of marketing jargon on products
- ❖ Analyze products cohesively, from titles to ingredients
- ❖ Understand the relationship between terms and product price
- ❖ Evaluate whether advanced NLP techniques perform better compared to manual text analysis
- ❖ Adapt a paper's method and apply it to a new domain or dataset

Freedman & Jurafsky

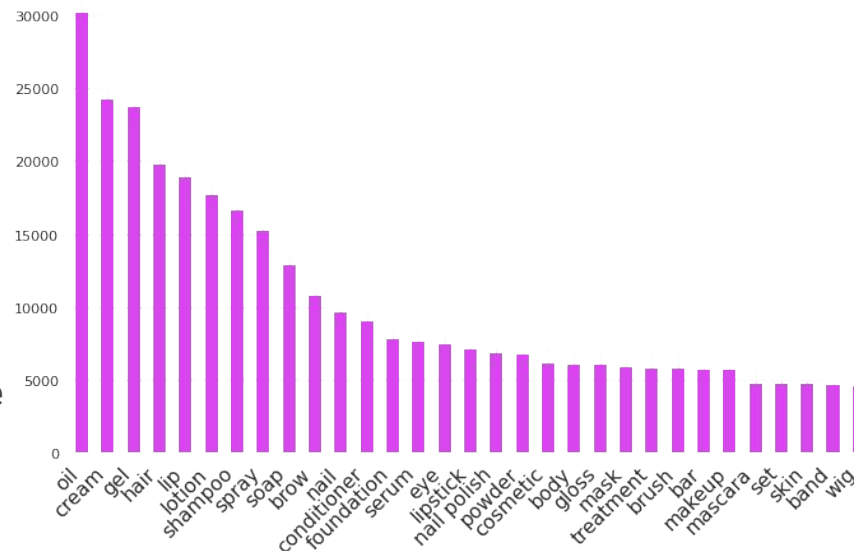
Authenticity in America Class Distinctions in Potato Chip Advertising

- ❖ 12 potato chip bags: 6 lower-priced, 6 high-priced
- ❖ **Authenticity** - naturalness, locality, historicity
- ❖ **Health** - particularly bad ingredients
- ❖ **Falutin** - flesch-kincaid, tokens, word commonality
- ❖ **Distinction** - comparator, uniqueness, linguistic negation



Data


- ❖ Hugging Face Amazon Reviews (Beauty and Personal Care)
- ❖ Jungle Scout Amazon Beauty Products
- ❖ Amazon Web Scrape
- ❖ California's Chemicals in Cosmetics Database (CDPH)



Data

- ❖ Lotion & Hair products
- ❖ Extracted from Hugging Face and Jungle Scout product_title
- ❖ Used ids to scrape and concatenate title, price, about, description, information, and tags
- ❖ Used BeautifulSoup, Selenium, requests-HTML, and Tor
- ❖ Scraped 33880 unique Amazon pages

Beauty & Personal Care > Skin Care > Body > Moisturizers > Creams



Roll over image to zoom in

Eucerin Original Healing Cream | Body Moisturizer for Extremely Dry Skin, Compromised Skin | Emollient Enriched Body Cream | Fragrance Free | Dermatologist Recommended Brand | 16 Ounce Jar (Pack of 2)

Visit the Eucerin Store
★★★★★ 4,526 ratings | 68 answered questions
Amazon's Choice in Body Creams by Eucerin

List Price: \$90.96
Price: **\$13.66** (\$0.43 / Ounce)
You Save: \$76.70 (85%)

Get \$10 bonus when you reload \$100 or more to your gift card balance.

Size: 16 Ounce (Pack of 2)
2 Ounce (Pack of 6) \$22.45 (\$3.74 / Ounce)
4 Ounce (Pack of 3) \$24.00 (\$8.00 / Ounce)
16 Ounce (Pack of 2) \$28.78 (\$9.72 / Ounce)

Ingredients Water, Petrolatum, Mineral Oil, Ceresin, Lanolin Alcohol, Phenoxethanol, Piroctone Olamine
Scent Fragrance Free
Item Form Semi-solid
Brand Eucerin
Skin Type Dry/Sensitive

About this item

- **EMOLIENT ENRICHED MOISTURIZER** - Leaves a soothing layer on skin to lock in moisture
- **DRY SKIN RELIEF** - Long lasting, rich body cream helps heal very dry, compromised skin and leaves it feeling smooth
- **DERMATOLOGIST RECOMMENDED** - For over 100 years, Eucerin has pioneered skincare innovation. Today we are trusted as one of the leading and most recommended brands. Our products are designed to protect, support, moisturize, and enhance the look of skin
- **GENTLE DAILY MOISTURIZER** - Daily moisturizing body cream can also be used as a hand cream for very dry skin relief
- **GENTLE ON SKIN** - This cream is Fragrance, dye and paraben free

Product description

Size: 16 Ounce (Pack of 2)

Eucerin Original Healing Cream is a time-tested formula that helps heal and protect extremely dry, sensitive, and compromised skin. The thick, rich, formula provides intensive moisture replacement for dry skin. Original Healing Cream binds water to the skin to provide effective moisturization and helps prevent moisture loss by replenishing the skin's moisture barrier. Original healing won't irritate skin, is non-comedogenic and is free of fragrances and dyes. For over 100 years, Eucerin has pioneered skincare innovation, and today we are recognized and trusted by dermatologists as one of the leading and most recommended brands.

Important information

Safety information
Caution: keep out of reach of children. For external use only. Avoid contact with eyes. Discontinue use if irritation occurs.

Ingredients
Water, Petrolatum, Mineral Oil, Ceresin, Lanolin Alcohol, Phenoxethanol, Piroctone Olamine

Directions
Smooth over very dry, compromised skin every day, or as directed by a physician. For best results apply immediately after bathing or showering.

Read reviews that mention

dry skin sensitive skin original healing highly recommend
extremely dry long time goes a long long way years ago
anything else wash my hands dermatologist recommended every day

Other Sellers on Amazon

\$25.18
+ Prime
Sold by Amazon.com
Add to Cart

\$28.60
+ Free Shipping
Sold by ONE CLICK STORE
Add to Cart

\$28.65
+ Free Shipping
Sold by essential
Add to Cart

Save 1%

Honest Beauty Magic Beauty Balm with Fruit & Seed Oils ...
\$8.99 \$9.99 10% off
\$12.54 \$14.99 16% off
Subscribe & Save
Sponsored

Data

Lotion

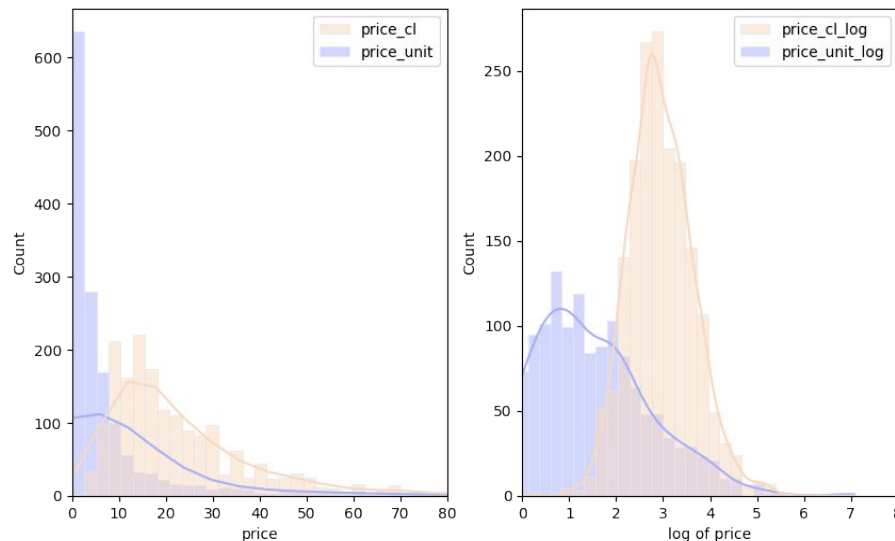
lotions, creams, moisturi(z/s)ers

- ❖ 2511 unique products with price
- ❖ median price: \$3.42 / oz

Hair

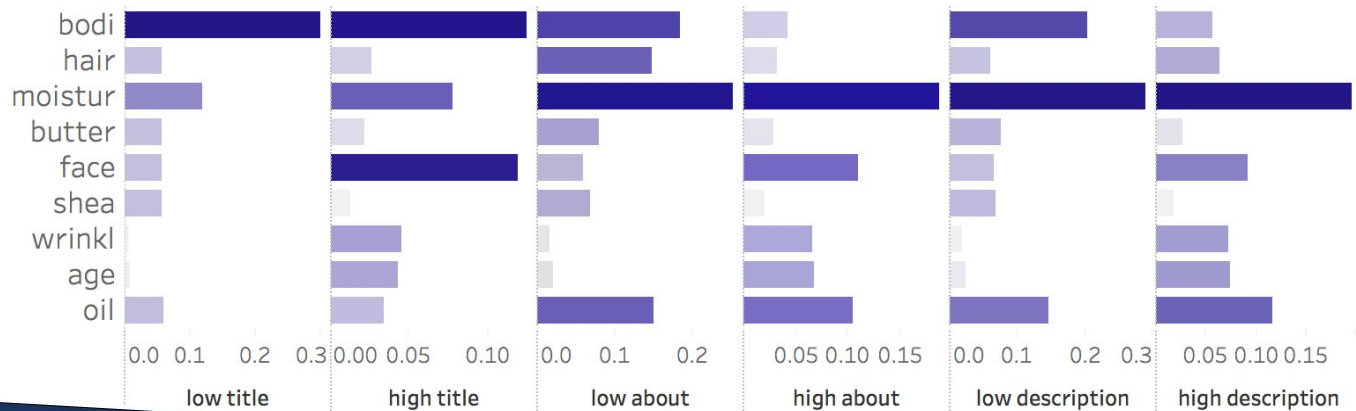
shampoos, conditioners

- ❖ 2464 unique products with price
- ❖ median price: \$1.72 / oz



Freedman and Jurafsky Analysis I

	Metric	Lotion	Hair	Eucerin example
Authenticity	TF-IDF	Higher \$: FDA/Physician tested Lower \$: bias in locality	Higher \$: Recommended	dermatologist recommend
Health	Number of Toxic Chemicals	Higher Priced Higher (slightly)	Same	mineral oil

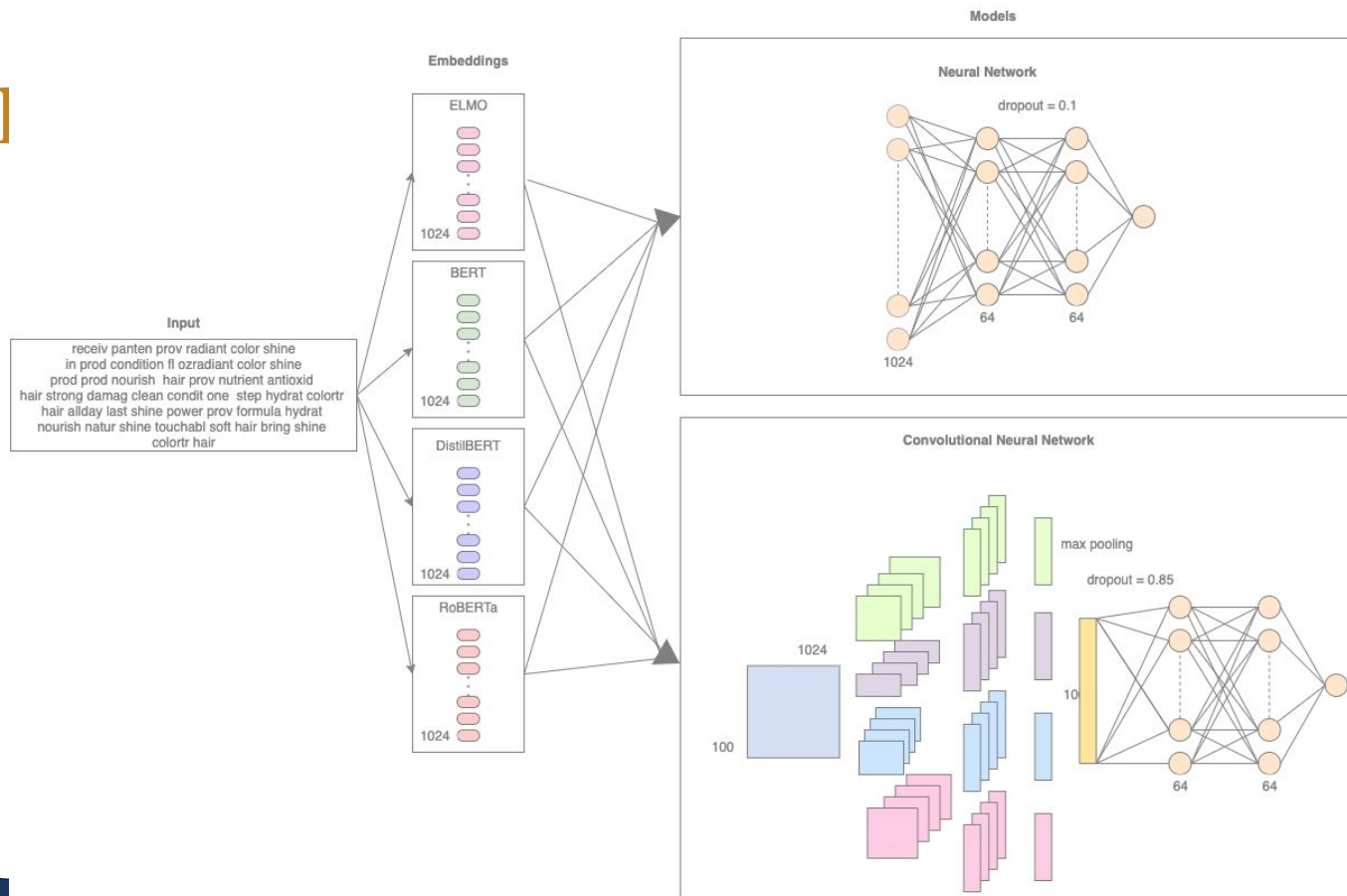


TF-IDF example for lotion

Freedman and Jurafsky Analysis I

	Metric	Lotion	Hair	Eucerin
Falutin	Flesch-Kincaid	Lower Priced Higher	Lower Priced Higher	63.4
	Readability	Lower Priced Higher	Higher Priced Higher	-84.84
	Lexicon Count	Lower Priced Higher	Lower Priced Higher	154
	Marketing Terms	Lower Priced Higher	Lower Priced Higher	41
Distinction	Uniqueness/Comparator Terms (Method I: Word2Vec)	Lower Priced Higher	Higher Priced Higher	0
	Uniqueness/Comparator Terms (Method II: GloVe)	Lower Priced Higher	Lower Priced Higher	19
	Sentiment	Lower Priced Higher (overall)	Lower Priced Higher (overall)	0.9947

Model



Results

	Lotion		Hair	
	NN	CNN	NN	CNN
Baseline	MAE: 6.47602 MSE: 164.18031		MAE: 1.341023 MSE: 6.54206	
ELMO	MAE: 5.603 MSE: 109.130	MAE: 3.849 MSE: 39.555	MAE: 1.467 MSE: 6.371	MAE: 1.298 MSE: 7.214
DistilBERT	MAE: 5.761 MSE: 125.258	MAE: 3.844 MSE: 39.430	MAE: 1.423 MSE: 6.645	MAE: 1.283 MSE: 7.352
RoBERTa	MAE: 6.929 MSE: 150.332	MAE: 3.638 MSE: 35.470	MAE: 1.415 MSE: 8.206	MAE: 1.270 MSE: 7.013
BERT	MAE: 6.730 MSE: 325.299	MAE: 3.791 MSE: 37.524	MAE: 1.371 MSE: 6.581	MAE: 1.293 MSE: 7.488

Best Results

Thank You!

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