

# Google

**MarTech solutions  
available on GitHub**

March 2025

# Merchant Excellence for Partners

Available on GitHub



## Merchant Excellence for Partners

Your one-stop shop to optimize your product data

Google

Challenge →

## Challenge



More and more Google ad formats like Shopping, YouTube and Apps rely on **product data**. And while Google Ads is increasingly driven by AI, data quality becomes key. Thus, improving and enriching your product data can directly impact auction and business results.

Google

Solution →

## Solution

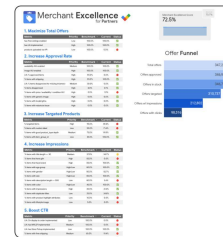


**Merchant Excellence for Partners** is a Google Cloud-based Looker Studio dashboard, empowering merchants to optimize their product data, reduce disapprovals, and drive auction performance across Google Ads and Merchant Center accounts.

Google

Example →

## Example



Fictitious numbers for illustration purposes only

Google

Use cases →

## Use cases



- Maximize total offers
- Increase approval rates
- Increase Google Ads targeted offers
- Increase impressions
- Differentiate your ads and boost CTR

Google

Benefits →

## Benefits



- Holistic Looker Studio dashboard
- Automated report refresh
- Fully customizable
- Open-source

Google

Requirements →

## Requirements



- Active Merchant Center account
- Active Google Ads account
- Google Ads developer token
- Google Cloud with billing enabled
- Python knowledge

Google

Learn more →

## Learn more



[github.com/  
google/  
ads\\_  
oneshop](https://github.com/google/ads_oneshop)

Google

Thank you

# Causmos

Available on GitHub



## Causmos

A seamless way to run  
Causal Impact analyses

Google

Challenge →

## Challenge



**Causal Impact analysis** is a powerful method for marketers to estimate the impact of an **intervention** (like a change in ad spend) on a **metric** (like conversions) when an experiment is not possible. However, setting up a Causal Impact analysis is not easy and requires technical know-how.

Google

Question →

## Solution

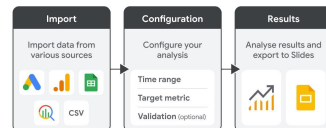


**Causmos** is an open-source web app to simplify Causal Impact analysis. It automates key steps such as data gathering, validation, and reporting, and does not require any coding. This makes Causal Impact analysis accessible to everyone, regardless of their technical expertise.

Google

Illustration →

## Illustration



Google

Use cases →

## Use cases



- Measure the impact of interventions
- Identify unintended consequences
- Alternative to A/B or Geo testing

Google

Benefits →

## Benefits



- Easy-to-use web app
- Data import from various sources
- Automated export to Google Slides
- No coding skills needed
- Time savings
- Open-source

Google

Requirements →

## Requirements



- Google Cloud with billing enabled
- Google Ads Developer token

Google

Learn more →

## Learn more



[github.com/  
google-  
marketing-  
solutions/  
causmos](https://github.com/google-marketing-solutions/causmos)

Google

Thank you

# Negative Keyword Cleaner

Available on GitHub



## Negative Keyword Cleaner

Easily clean your negative keyword lists with AI

Google

Challenge →

## Challenge



**Negative keywords** let you exclude search terms to focus on keywords that matter. Better targeting can put your Search ad in front of interested users and increase your return on investment. But, managing negative keyword lists can be tricky, and you might inadvertently block your ads from appearing in relevant searches.

Google

Question →

## Solution

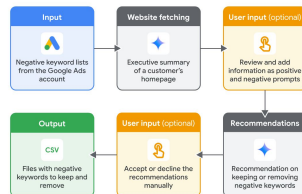


**Negative Keyword Cleaner**, powered by Gemini, analyzes your website and other information you provide to build a thorough understanding of your business. The tool can then assess the relevance of your negative keywords and highlight those that may be blocking potential customers from finding you.

Google

Illustration →

## Illustration



Google

Use cases →

## Use cases



- Improve Search ad performance
- Easy negative keyword list handling
- Spring-clean older accounts

Google

Benefits →

## Benefits



- Time and cost saving
- Works for all languages & industries
- Open-source

Google

Requirements →

## Requirements



- Google Cloud with billing enabled
- Google Ads account
- Manager account ID (MCC ID)
- Google Ads Developer token

Google

Learn more →

## Learn more



[github.com/  
google-  
marketing-  
solutions/  
negative-  
keyword-  
cleaner](https://github.com/google-marketing-solutions/negative-keyword-cleaner)

Google

Thank you



# Copycat

Available on GitHub



## Copycat

Generate Search ads at scale  
in your brand's tone of voice

Google

Challenge →

## Challenge



Search campaigns offer a powerful way to reach consumers across Google's vast network of search results. Yet, **writing new Search ads can be cumbersome**. Available AI tools speed up the process, but they often create generic ads that might lack a brand's unique tone and style.

Google

Question →

## Solution

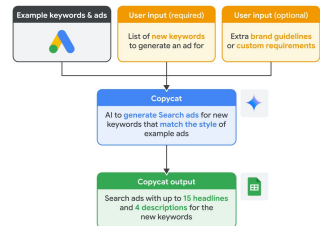


**Copycat** uses Google's Gemini to analyze an advertiser's existing Search ads, learning their unique tone of voice and style. It can then create **custom, on-brand Search ads** for new keywords automatically. Human review remains essential, but Copycat empowers advertisers to accelerate their ad creation process.

Google

Illustration →

## Illustration



Google

Use cases →

## Use cases



- Launch new Search campaigns faster
- Increase Search ad variation
- Improve ad strength

Google

Benefits →

## Benefits



- Fully automated and scalable
- Time and cost saving
- Fully customizable
- Open-source

Google

Requirements →

## Requirements



- Existing high-quality Search ads
- A set of new keywords
- Google Cloud with billing enabled
- Gemini API enabled

Google

Learn more →

## Learn more



[github.com/  
google-  
marketing-  
solutions/  
copycat](https://github.com/google-marketing-solutions/copycat)

Google

Thank you

# BackgroundR

Available on GitHub



## BackgroundR

AI-powered backgrounds  
for stunning product images

Google

Challenge →

## Challenge



In the world of online shopping, captivating visuals are essential for success. Merchants that invest in more and higher-quality product images often see better results. Yet, **traditional photoshoots can be expensive and slow**, which makes it difficult to keep up with trends and maintain fresh product images.

Google

Question →

## Solution

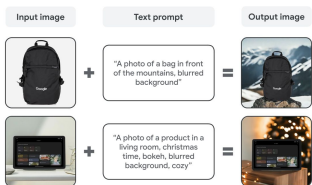


**BackgroundR** elevates product photography with AI-generated backgrounds. Powered by Google's latest Imagen models, it can generate stunning backgrounds from text prompts or replace existing ones to highlight your products. Edit single images or entire asset libraries in bulk!

Google

Examples →

## Examples



Google

Use cases →

## Use cases



- Bring product shots to life
- Increase the variety of Display ads
- Improved targeting / personalization

Google

Benefits →

## Benefits



- No product reshoots needed
- Easy-to-use and customizable
- Saves time and costs
- Open-source

Google

Requirements →

## Requirements



- Google Sheets
- Google Cloud with billing enabled
- Vertex AI API enabled

Google

Learn more →

## Learn more



[github.com/  
google-  
marketing-  
solutions/  
backgroundr](https://github.com/google-marketing-solutions/backgroundr)

Google

Thank you 🙌

# Demand Gen Pulse

Available on GitHub



## Demand Gen Pulse

Make the most out of your  
Demand Gen campaigns

Google

Challenge →

## Challenge



**Demand Gen campaigns** help advertisers reach consumers across Google's most immersive platforms: YouTube, Discover, and Gmail. However, reporting for Demand Gen campaigns can be cumbersome and advertisers need an easy way to see how their campaigns and assets perform across accounts.

Google

Question →

## Solution

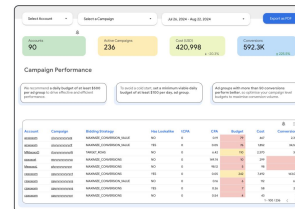


**Demand Gen Pulse** is a Looker Studio dashboard that provides a **centralized view** of Demand Gen campaign performance and the assets uploaded. It helps identify if campaigns and assets follow best practices and gives **actionable insights** for optimizations across accounts.

Google

Example →

## Example



Demo numbers for illustration purposes only

Google

Use cases →

## Use cases



- Campaign performance insights
- Conversion health monitoring
- Audience performance analysis
- Adopt creative best practices

Google

Benefits →

## Benefits



- Actionable insights
- Fully automated and scalable
- Time-saving
- Open-source and fully customizable

Google

Requirements →

## Requirements



- Google Cloud with billing enabled
- Google Ads developer token

Google

Learn more →

## Learn more



[github.com/  
google-  
marketing-  
solutions/  
dgpulse](https://github.com/google-marketing-solutions/dgpulse)

Google

Thank you

# ABCDS Detector

Available on GitHub



## ABCDS Detector

Assess your videos against  
YouTube best practices using AI

Google

Challenge →

## Challenge



YouTube ads that drive results share key characteristics, summarized in the **ABCD** principles – **Attention**, **Branding**, **Connection**, **Direction**. However, assessing videos against these creative best practices can be challenging, especially when dealing with a large number of videos.

Google

Question →

## Question



Is there a way to evaluate videos against YouTube's ABCD framework in an automated way?

Google

Solution →

## Solution



Yes! **ABCDS Detector** streamlines the assessment of your videos against YouTube's ABCD framework. **Powered by Google AI**, this tool automates the evaluation process, providing YouTube advertisers with insights on how well their videos – existing or future ads – align with key creative excellence metrics.

Google

Overview →

## Overview



### ABCD features tested

✓/✗	Attention	Quick Pacing
✓/✗	Attention	Dynamic Start
✓/✗	Attention	Supers
✓/✗	Branding	Brand Visuals
✓/✗	Branding	Brand Mention
✓/✗	Branding	Product Visuals
✓/✗	Branding	Product Mention
✓/✗	Connection	Visible Face
✓/✗	Connection	Presence of People
✓/✗	Connection	Overall Pacing
✓/✗	Direction	Audio Speech Early
✓/✗	Direction	Call To Action

Google

Use cases →

## Use cases



Creative assessment of videos



Drive creative testing strategy

Google

Benefits →

## Benefits



23 ABCD features are tested



Powered by Google AI



Fully automated and scalable



Easy to deploy



Open-source

Google

Requirements →

## Requirements



Google Cloud with billing enabled



Video Intelligence API enabled



Vertex AI API enabled



Knowledge Graph API enabled



Cloud Storage API enabled

Google

Learn more →

## Learn more



[github.com/  
google-  
marketing-  
solutions/  
abcs-  
detector](https://github.com/google-marketing-solutions/abcs-detector)

Google

Thank you ↩

# sGTM Pantheon

Available on GitHub

## sGTM Pantheon

Unlock the full power of  
server-side Google Tag Manager

Google

Challenge →

## Challenge

Evolving privacy regulations and technological advancements have made it increasingly difficult for businesses to effectively **collect, manage, and activate first-party data**. Additionally, **site speed** and ensuring **robust data control** have become critical challenges in today's digital environment.

Google

Question →

## Question

Is there a way for businesses to **use first-party data effectively**?

Google

Solution →

## Solution

Yes! **sGTM Pantheon** is a toolbox of solutions that enhances **server-side Google Tag Manager (sGTM)**, enabling businesses to gather, transform, and share first-party data effectively. This empowers improved reporting, audience management, bidding, and data pipelines.

Google

Overview (I) →

## Overview (I)

### Solutions to fetch data into sGTM

<b>Soteria</b>	Calculate profit for bidding without exposing sensitive data
<b>Phoebe</b>	Call Vertex AI in real-time for lifetime value bidding and lead scoring
<b>Artemis</b>	Get data from Firestore for audience segmentation and web personalization
<b>Apollo</b>	Get data from a Google Sheet and generate lead gen value for lead scoring
<b>Cerberus</b>	Integrate reCAPTCHA to filter bots and suspicious activity
<b>Dioscuri</b>	Easily access Gemini for advanced personalization

Google

Overview (II) →

## Overview (II)

### Solutions to send data from sGTM

<b>Hephaestus</b>	Write data to Firestore in real-time for adv. audience activation and reporting
<b>Chaos</b>	Write data to BigQuery for advanced analytics and reporting
<b>Deipneus</b>	Send first-party data to website for web personalization and audience creation
<b>Hermes</b>	Use sGTM to streamline data pipelines using Pub/Sub

Google

Benefits →

## Benefits

- Improved site speed and performance
- Advanced analytics and reporting
- Durable measurement
- Reusable across platforms
- Easy to deploy
- Open-source

Google

Requirements →

## Requirements

- ☒ Google Cloud with billing enabled
- ☒ Access to sGTM

Google

Learn more →

## Learn more

[github.com/  
google-  
marketing-  
solutions/  
gps-sgtm-  
pantheon](https://github.com/google-marketing-solutions/gps-sgtm-pantheon)

Google

Thank you ↩

# Ariel

## Available on GitHub

### Ariel

Translate and dub video ads into other languages with AI

Google

Challenge →

## Challenge

New markets mean new customers, but language barriers might hold advertisers back. Traditional translation and dubbing of video ads can be **time-consuming and expensive**, posing a real roadblock to launching campaigns fast and reaching international audiences.

Google

Question →

## Question

Is there a solution to translate and dub video ads in a **time-saving and cost-efficient** way?

Google

Solution →

## Solution

Yes! **Ariel** uses multiple AI models including Gemini to **automatically preprocess, translate and dub video ads**. It makes it much easier for advertisers to drive international expansion and reach wider audiences – all with **reduced costs and automated post-production**.

Google

Illustration →

## Illustration



Google

Benefits →

## Benefits

- Drive international expansion
- Reach wider audiences
- Cost-efficient and time-saving
- 40+ languages supported
- Easy to deploy
- Open-source

Google

Requirements →

## Requirements

- Google Cloud project
- Enabled Cloud Text-To-Speech API
- Hugging Face Token
- Google AI Studio Token
- ElevenLabs API Token (optional)
- Device with a GPU (recommended)

Google

Learn more →

## Learn more

[github.com/  
google-  
marketing-  
solutions/  
ariel](https://github.com/google-marketing-solutions/ariel)

Google

Thank you ↗

# Mad PMax

Available on GitHub

## Mad PMax

Make your Performance Max campaigns truly scalable

Google

Challenge →

## Challenge

Performance Max (PMax) uses the full power of Google AI to help advertisers drive conversions across Google Ads inventory. By optimizing workflows for the creation of PMax campaigns, asset groups, and asset uploads, **PMax can scale even better.**

Google

Question →

## Question

Is there a solution to manage and upload PMax campaigns, asset groups and assets **at scale**?

Google

Solution →

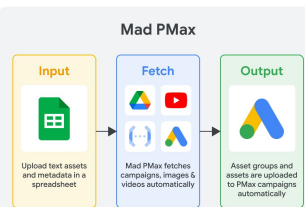
## Solution

Yes! **Mad PMax** combines the simplicity of **Google Sheets** with the power of **Google Cloud**. Just add the details (like account name, campaign name, etc.) for your PMax campaigns, asset groups and assets into the 'Mad PMax' sheet, and with a **single click**, your changes are seamlessly uploaded to Google Ads.

Google

Illustration →

## Illustration



Google

Use cases →

## Use cases

- Replicate PMax campaigns at scale
- Upload assets for PMax at scale
- Create asset groups for PMax at scale
- Prevent PMax setup errors

Google

Benefits →

## Benefits

- User-friendly Google Sheets UI
- Central management hub
- Saves time and resources
- Easy to deploy
- Open-source

Google

Requirements →

## Requirements

- Google Cloud project
- Google Ads API developer token
- Terraform deployment

Google

Learn more →

## Learn more

[github.com/  
google-  
marketing-  
solutions/  
madpmax](https://github.com/google-marketing-solutions/madpmax)

Google

Thank you ↩

# GA4 Ecom Attributor

## Available on GitHub

### GA4 Ecom Attributor

Item list and Promotion attribution  
in Google Analytics 4

Google

Challenge →

## Challenge

With ecommerce measurement in GA4, you can send Item list and Promotion data to **better understand the shopping behaviour** on your website. Yet, it can be very difficult to provide this information on every single ecommerce event. This can result in **missing insights** in Item list and Promotion reports.

Google

Question →

## Question

Is there a solution to populate Item list and Promotion reports **with ecommerce data**, without having to make **complex code adjustments** on your website?

Google

Solution →

## Solution

Yes! **GA4 Ecom Attributor** is a solution that temporarily stores and reads Item list and Promotion data throughout the checkout. As a result, it makes monetization reports in GA4 **more actionable and insightful for all ecommerce events** such as 'add\_to\_cart', 'checkout' or 'purchase'.

Google

Example →

## Example

Item list name	Item list view events	Item list click events	Item list item impressions	Add to baskets	Checkouts	E-commerce purchases	Item-revenue
	10,000 100% of total	2,000 100% of total	40,000 100% of total	1,000 100% of total	1,000 100% of total	300 100% of total	\$100,000.00
Home - top products	10,000	2,000	40,000	0	0	0	\$0.00
Search results	4,500	2,200	57,400	0	0	0	\$0.00
On sale	2,000	300	10,000	0	0	0	\$0.00
Out of stock	0	0	0	1,000	1,000	300	\$100,000.00

GA4 Ecom Attributor

Item list name	Item list view events	Item list click events	Item list item impressions	Add to baskets	Checkouts	E-commerce purchases	Item-revenue
	10,000 100% of total	2,000 100% of total	40,000 100% of total	1,000 100% of total	1,000 100% of total	300 100% of total	\$100,000.00
Home - top products	10,000	2,000	40,000	0	0	0	\$0.00
Search results	4,500	2,200	57,400	0	0	0	\$0.00
On sale	2,000	300	10,000	0	0	0	\$0.00
Out of stock	0	0	0	1,000	1,000	300	\$100,000.00

Fictitious numbers for illustration purposes only

Google

Use cases →

## Use cases

- Item list attribution in GA4
- Promotion attribution in GA4

Google

Benefits →

## Benefits

- Implementation via web or server GTM
- No adjustments to website code
- Customizable and extensible
- Open-source

Google

Requirements →

## Requirements

- ✓ GTM web or server container
- ✓ Measuring ecommerce with GA4
- ✓ List data is available at least once
- ✓ Promotion data is available at least once

Google

Learn more →

## Learn more

[github.com/  
google-  
marketing-  
solutions/  
ga4-ecom-  
attributor](https://github.com/google-marketing-solutions/ga4-ecom-attributor)

Google

Thank you ↩



# ViGenAiR

Available on GitHub

## ViGenAiR

Recrafting Video Ads  
with Generative AI

Google

Challenge →

## Challenge

Engaging video ads are essential for brands to **raise awareness** and **connect with their target audience**. However, traditional video production is often costly and time-consuming, limiting the ability to **create several versions and ad formats**, or **tailor messaging** to specific audience segments.

Google

Question →

## Question

Is there a solution capable of **automatically transforming video ads** (1 minute or longer) into **shorter versions**, in **multiple ad formats**, and targeting **different audiences**?

Google

Solution →

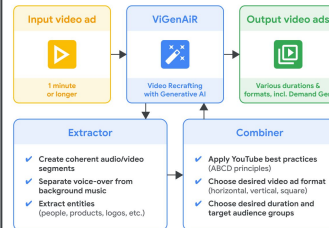
## Solution

Yes! **ViGenAiR** harnesses the power of **Gemini on Google Cloud** to effortlessly transform your video ads into shorter versions in various formats. Choose from **AI-suggested** variants or take **full creative control** with manual editing to generate ads tailored to your desired audiences.

Google

Illustration →

## Illustration



Google

Use cases →

## Use cases

- Run YouTube video campaigns
- Run Demand Gen campaigns
- Personalise existing video assets
- Cover more video inventory
- Increase video asset variety

Google

Benefits →

## Benefits

- Lower post-production cost and time
- Raise brand awareness
- Drive mid-funnel consideration
- Generate high-quality videos
- User-friendly Web App
- Open-source

Google

Requirements →

## Requirements

- ✓ Google Cloud project
- ✓ Google account
- ✓ Google Ads account
- ✓ YouTube channel

Google

Learn more →

## Learn more

[github.com/  
google-  
marketing-  
solutions/  
vigenair](https://github.com/google-marketing-solutions/vigenair)

Google

Thank you ↩

# GA4 Dataform

## Available on GitHub

### GA4 Dataform

GA4 attribution in BigQuery made easy

Google

Challenge →

## Challenge

Working with **Google Analytics 4 (GA4)** BigQuery exports demands expertise in handling complex data structures. When tackling key questions like attribution, many advertisers struggle to apply their knowledge to the observable data present in the exports.

Google

Question →

## Question

Is there a solution that helps marketers use **custom-built attribution models**, and easily query the GA4 raw data in BigQuery?

Google

Solution →

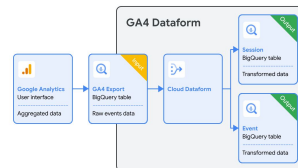
## Solution

Yes! **GA4 Dataform** transforms GA4 raw data exports into user-friendly and modular tables. It provides **last-click attribution models for sessions and events**, and can act as a launchpad for developing **custom attribution models**.

Google

Illustration →

## Illustration



Google

Use cases →

## Use cases

- Session-level attribution
- Event-level attribution
- Custom data pipelines

Google

Benefits →

## Benefits

- Simpler queries and built-in models
- Joins GA4 with Google Ads data
- Customizable and extensible
- Open-source

Google

Requirements →

## Requirements

- Google Cloud project
- Daily GA4 BigQuery raw data export
- Google Cloud Dataform
- Developer

Google

Learn more →

## Learn more

[github.com/  
google-  
marketing-  
solutions/  
ga4\\_  
dataform](https://github.com/google-marketing-solutions/ga4_dataform)

Google

Thank you ↩

# Fractional Uplift

Available on GitHub

## Fractional Uplift

Boost your incremental  
Return on Investment (ROI)

Google

Challenge →

## Challenge

Some marketing campaigns, such as offering **promotions** (i.e. discounts or coupons), drive lots of sales, but also **cut into margins**. To optimize marketing spend, it is essential to **strategically target** these campaigns to the right customers.

Google

Question →

## Question

Is there a solution that helps marketers to **target promotion campaigns** to the **right customers**?

Google

Solution →

## Solution

Yes! **Fractional Uplift** is an **uplift modelling solution** that goes beyond traditional models by factoring in the **cost of promotions**. It helps you find the customers with the **right balance** between incremental sales and cost, thus **boosting your incremental ROI**.

Google

Illustration →

## Illustration



Google

Use cases →

## Use cases

- Targeted discount campaigns
- Targeted coupon campaigns

Google

Benefits →

## Benefits

- Models both cost and incrementality
- Flexible and easy to deploy
- Open-source

Google

Requirements →

## Requirements

- Randomised historical data
- Data science expertise
- Developer to deploy the model

Google

Learn more →

## Learn more

[github.com/  
google-  
marketing-  
solutions/  
fractional\\_  
uplift](https://github.com/google-marketing-solutions/fractional_uplift)

Google

Thank you ↩

## Ads Policy Monitor

**Available on GitHub**

## Ads Policy Monitor

## Monitor ad policy violations in Google Ads at scale

Google



## Challenge

To keep ads **safe and appropriate for everyone**, ads need to comply with Google Ads policies. When you have an **ad with policy violations**, you want to review the policy and fix the ad to get it running. Yet, it is challenging to monitor the state of all your ads across accounts.



## Question

Is there a solution to analyze ad policy violations at scale and easily take action on disapproved ads?



## Solution

Yes! **Ads Policy Monitor** is an **open-source dashboard** based on Google Cloud, which gives you a **unified view** of all your ad policy violations across Google Ads accounts. When ads are disapproved, just **follow the deep links** into Google Ads to **take action**.

Google

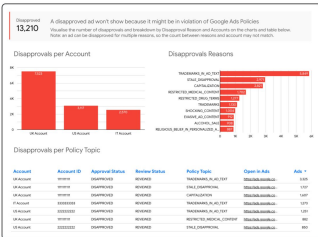


## Use cases

-  Analyze ad policy violations at scale
-  See ad policy violations by category
-  See trends in ad policy violations
-  Take action on disapproved ads



### Example



## Benefits

- 🔗 Actionable with Google Ads deep links
- 🔧 Easy to implement
- 🔧 Customizable
- 🔒 Open-source

Google



## Requirements

- ✓ Google Cloud project
- ✓ Access to Google Ads API
- ✓ Access to Looker Studio



**Learn more**

github.com/  
google-  
marketing-  
solutions/  
ads-policy-  
monitor

Google



# Optimus

Available on GitHub

## Optimus

Personalized marketing with  
Reinforcement Learning

Google



## Challenge

Imagine offering customized product recommendations or promotions in a data-driven way – that's **personalized marketing**. Yet, marketers might find it hard to find the right **AI tools** to do this. Hence, they miss an opportunity to further **optimize their marketing efforts**.

Google



## Question

Is there an **easy-to-deploy AI solution** for personalized marketing?

Google



## Solution

Yes! **Optimus** is an open-source Python library. It helps marketers to personalize their applications **in real time** (for dynamic landing pages, prices, newsletter, etc.) with **AI**. Optimus is **easy to deploy** and it uses **Reinforcement Learning** to constantly learn and improve.

Google



## Use cases

- Personalized website content
- Personalized emails and newsletters
- Personalized prices and promotions
- Personalized recommendations

Google



## Illustration



Optimus learns by finding relationships between available **input data** (1) (e.g. website analytics), predicted **marketing action** (3) (e.g. recommended products) and **feedback** (4) (e.g. conversion or no conversion) to that action.

Google



## Benefits

- Identifies patterns in complex data
- Adaptable to new situations
- No labeled data needed
- No historical data needed
- Easy to deploy to Google Cloud
- Open-source

Google



## Requirements

- Tabular input data
- Access to rewards
- High data velocity and volume
- Google Cloud project
- Python knowledge
- Data engineer

Google



## Learn more

[github.com/  
google-  
marketing-  
solutions/  
optimus](https://github.com/google-marketing-solutions/optimus)

Google



# Description Genius

## Available on GitHub

### Description Genius

Create captivating product descriptions with Gemini

Google



## Challenge

High-quality product descriptions are important for businesses to help customers make informed purchase decisions. However, descriptions need to be written, styled and formatted for website usage. This process can be manual, costly and time-intensive.

Google



## Question

Is there a solution that helps businesses generate captivating product descriptions easily and at scale?

Google



## Solution

Yes! Description Genius leverages Gemini Pro to generate product descriptions at scale. Just upload a CSV file with your product attributes and other information (e.g. product images or customer reviews), and the tool creates human-readable descriptions in the format of your choice (e.g. HTML).

Google



## Use cases

- Generate product descriptions
- Optimise product landing pages

Google



## Example

### Input

Colour	Material	Type	Size	Price	Care Guide
Black	Leather	Pants	S/M/L	\$250	Hand wash

### Output

These black leather pants are a luxurious and durable addition to any wardrobe. Leather is a high-quality material that provides warmth and breathability, making these pants suitable for various weather conditions. Available in sizes S, M, and L, these pants offer a tailored fit for different body types. At \$250, these pants are an investment in timeless quality. To maintain their luxurious feel, hand washing is recommended.

Google



## Benefits

- Easy-to-use interface
- Tuning with few-shot prompting
- Customizable to your needs
- Output in the format of your choice
- Open-source

Google



## Requirements

- Google Cloud project
- Vertex AI API enabled

Google



## Learn more

[github.com/  
google-  
marketing-  
solutions/  
description\\_  
genius](https://github.com/google-marketing-solutions/description_genius)

Google



# FeedX

Available on GitHub

## FeedX

Easily design and run  
A/B tests on Shopping feeds

Google



## Challenge

Optimizing Shopping feeds is important in order to improve the performance of Shopping ads. But currently, **there's no easy way** to do A/B tests on Shopping feeds. As a result, merchants cannot make **data-driven decisions** to optimize their Shopping feeds.

Google



## Question

Is there a solution that allows merchants to **easily design and run trustworthy A/B tests** on Shopping feeds?

Google







## Solution

Yes! **FeedX** is an open-source A/B testing tool for Shopping feeds. It splits **products** (rather than traffic or users) into control and treatment groups. And, it is built with **industry best practices** in experiment design to ensure that results are **sensitive and reliable**.

Google



## Use cases

-  Test different product titles
-  Test different product descriptions
-  Test different product images
-  Test adding missing attributes

Google



## Features



**Power analysis:** This ensures you have enough items and a long enough runtime for a reliable experiment.



**Crossover:** This means that treatment and control groups are swapped half way through the test for maximum sensitivity.



**CUPED:** This is a method used to remove variance in a metric by considering historical data prior to the test.



**Trimming:** This refers to removing items with extremely high performance to make the test more robust.

Google



## Benefits



Reliable and trustworthy results



Based on industry best practices



Easy-to-use interface (Google Colab)



Transparent and open-source



Fully automated

Google



## Requirements



At least 1,000 products for the test



Basic python knowledge

Google



## Learn more

[github.com/  
google-  
marketing-  
solutions/  
feedx](https://github.com/google-marketing-solutions/feedx)

Google



# Adios

Available on GitHub

## Adios

Create and manage  
image assets at scale

Google



## Challenge

Consumers now expect a more **visual experience** when they browse products/services online. That's why we introduced **image assets** for Search ads. But, creating and uploading relevant images can be **time-consuming** and **cumbersome**.

Google



## Question

Is there a solution for advertisers to **create, upload** and **manage** relevant visuals for image assets **at scale**?

Google



## Solution

Yes! **Adios** is an open-source solution using Google's **Gemini model** to generate visuals automatically from contextual information (e.g. ad group name). It also allows you to then **easily upload and manage** image assets for thousands of ad groups.

Google



## Use cases



Generate image assets with GenAI



Easily upload & manage image assets

Google



## Example

Ad group: **New\_York\_City**



Google



## Benefits

- Easy to use
- Easy to install
- Easy to experiment
- Full quality control
- Fully customizable
- Open-source

Google



## Requirements

- Google Ads API developer token
- Google Cloud Vertex AI API enabled

Google



## Learn more

[github.com/  
google-  
marketing-  
solutions/  
adios](https://github.com/google-marketing-solutions/adios)

Google





# Soteria

Available on GitHub

## Soteria

Bid to profit like a pro

Google

Challenge



Driving profits is an important goal for advertisers. Just use profit as the conversion value and a value-based bidding (VBB) strategy to optimise profitability. Yet, conversion values are exposed in network requests and can be seen by sophisticated users.

Google

Question



Is there a solution for advertisers to bid to profit in real time while profits are not exposed and conversion modeling is supported?

Google

Solution



Yes! Soteria uses server-side Google Tag Manager (sGTM) to send profit data in real time to Google Analytics, Google Ads or Floodlights for profit-based bidding. In this case, profit data is encrypted and conversion modeling is supported.

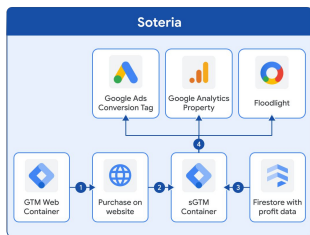
Google

Use cases

- \$ Optimise for profit maximization
- % Optimise for target profitability

Google

Illustration



Google

Benefits

- 🔒 Encrypted conversion value
- 📊 Full conversion modeling
- 🕒 Real-time conversion data
- ⚙️ No ads APIs needed
- 🛡️ Future-proof
- 🔧 Open-source and customizable

Google

Requirements

- ✓ Deployed sGTM container
- ✓ Google Cloud project
- ✓ Product-level profit data
- ✓ Data engineer

Google

Learn more

[github.com/  
google-  
marketing-  
solutions/  
gps\\_soteria](https://github.com/google-marketing-solutions/gps_soteria)

Google

# Crystalvalue

Available on GitHub

## Crystalvalue

Easily predict  
Customer Lifetime Value  
with Vertex AI



### Challenge



Not all customers are equal. Hence, it is important for marketers to identify the most valuable customers by predicting their **Lifetime Value (LTV)**. However, developing accurate predictive LTV models is **difficult** and can require **months of work**.



### Question



Is there an **end-to-end solution** for building, deploying and maintaining predictive LTV models?



### Solution



Yes! **Crystalvalue** is an **end-to-end solution** which leverages **Google Cloud's Vertex AI (AutoML)**. It allows marketers to train and deploy ML models with 1st party data in order to identify **high value customers** and optimise marketing strategies.

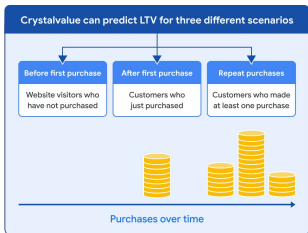


### Use cases

- Identify high value customers
- Acquire more high LTV customers
- Identify upsell opportunities
- Reduce customer churn



### Illustration



### Benefits

- End-to-end pipeline
- Automated feature engineering
- State-of-the-art ML models
- Easy to build, deploy & maintain
- Open-source
- Highly customizable



### Requirements

- BigQuery and Vertex AI API
- Transaction | CRM | Browsing data
- Data Science knowledge



### Learn more

[github.com/  
google-  
marketing-  
solutions/  
crystalvalue](https://github.com/google-marketing-solutions/crystalvalue)



### Follow us

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# FeedGen

Available on GitHub

## FeedGen

Optimise Shopping feeds  
with Generative AI



### Challenge

For advertisers working with Google Merchant Center (GMC), optimising feeds is crucial to make **Shopping ads**, **listings** and **campaigns** successful. Yet, improving product data and fixing feed quality issues is cumbersome and time-consuming.



Can we use GenAI to optimise Shopping feeds more **efficiently** and **effectively**?



### Challenge

For advertisers working with Google Merchant Center (GMC), optimising feeds is crucial to make **Shopping ads**, **listings** and **campaigns** successful. Yet, improving product data and fixing feed quality issues is cumbersome and time-consuming.



Can we use GenAI to optimise Shopping feeds more **efficiently** and **effectively**?



### Solution



FeedGen utilises the power of Large Language Models (LLMs) on Google Cloud to **improve titles**, generate more **comprehensive product descriptions**, and **fill missing feed attributes** – all with just a few clicks!



### Use cases

FeedGen optimises your entire feed, and you have full control over what you put back into GMC.



Are you struggling with **low performing** titles?



Does your feed have **data gaps**?



Do you have high **disapproval rates**?



### Example

Input title	FeedGen: Optimised title
2XU Men's Swimmers Compression Long Sleeve Top	2XU Men's Swim Compression Long Sleeve Top, Black, Size M, UPF-50
Input description	FeedGen: Detailed description
Lightweight, black PWX fabric, comfortable fit, UPF-50 protection.	A top choice for swimmers of all levels, the 2XU Men's Swim Compression Long Sleeve Top is made from lightweight, black PWX fabric...*
Input attributes	FeedGen: Gaps filled
Color: - Size: M	Color: Black Size: M

\* Description has been truncated, full example is available on GitHub.  
This is a fictitious example based on the Look eCommerce public BigQuery dataset.



### Benefits

- 🔍 Increase query matching
- 📈 Boost coverage and CTR
- 📊 Improve feed quality
- 📦 Transparent and open-source



### Requirements

- ✓ Google Cloud project with Vertex AI API enabled
- ✓ Google Ads and Merchant Center accounts
- ✓ General understanding of LLMs and prompt-tuning



### Learn more

[github.com/  
google-  
marketing-  
solutions/  
feedgen](https://github.com/google-marketing-solutions/feedgen)



### Follow the series

#AvailableOnGitHub



# Product Video Ads

Available on GitHub

## Product Video Ads

Generate video ads with product information **automatically** and **at scale**



Challenge



Producing videos for retail isn't easy, especially when you want to promote **many products** with **changing prices or discounts**. How can this be done in an **automated** and **scalable** way?



Solution



With Product Video Ads (PVA), you can link a product feed to a base video and **automatically** create video ads **at scale**. It's easy to recreate videos when **prices or discounts change**.



Use cases



Replace paper leaflets with **digital video catalogs**



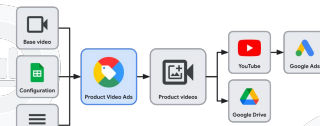
Easily advertise weekly **sales promotions**



Target product sets to **different audiences**



Illustration



- 1 Upload your base video
- 2 Configure video element positions and timing
- 3 Add your products to advertise
- 4 Generate product videos
- 5 Assign product videos to campaigns



Benefits

- 💰 Cost-effective video production
- 🔄 Scalable to hundreds of products
- ⚙️ Fully customizable
- ⚙️ Automated and time-saving
- 🔒 Free and open source
- 📋 Easy-to-use platform



Requirements

- ✓ Google Cloud project
- ✓ Base video(s)
- ✓ Product feed



Learn more

[github.com/google/product\\_video\\_ads](https://github.com/google/product_video_ads)



# If This Then Ad

Available on GitHub

## If This Then Ad

Automatically manage marketing campaigns based on **real-time events**



Challenge



Producing videos for retail isn't easy, especially when you want to promote **many products** with **changing prices or discounts**. How can this be done in an **automated** and **scalable** way?



Solution



If This Then Ad (IFTTA) is an **easy-to-use tool** that makes it possible to integrate data from **any JSON API** and run rule-based marketing campaigns **automatically**.



Use cases



Run tailored ads for summer clothes when it's **warm and sunny**



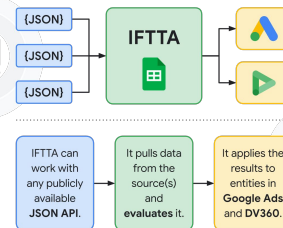
Run tailored ads for a club's football jerseys when they **score a goal**



Run tailored ads for a nasal spray in regions with a **high pollen count**



Illustration



Benefits



Capture demand spikes



Tailor creatives and messaging



Easy-to-use user interface



Automated and in real-time



Customizable and flexible



Free and open source



Requirements



Access to Google Sheets



Google Cloud project



Google Ads / DV360 account



Learn more

[github.com/google/if-this-then-ad](https://github.com/google/if-this-then-ad)



# ML-ToAST

## Available on GitHub series

### ML-ToAST

Cluster search terms across languages and time frames into semantically **relevant topics**



## Challenge

- Topic clustering is **important but cumbersome**; advertisers don't want to sift through thousands of user queries manually, or lack the required technical resources to perform such analyses.
- Understanding consumer interest is **becoming more demanding**, especially with AI-powered search optimization (e.g. *Broad Match*) becoming more fundamental in Google Ads.
- Google Ads *search terms insights* are **limited in scope and time**, and are not available outside the UI.



## Solution

A model that is designed to work **optimally** for search terms, based on **TensorFlow** and popular clustering algorithms.

### Multi-platform

Works for Google Ads as well as others

### Privacy-friendly

Users don't need to share data

### Quick and cheap

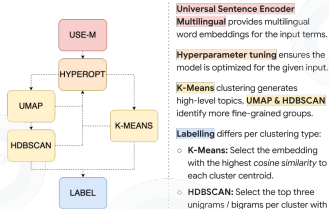
Train and predict on Colab for free in under 30 mins

### Configurable

Fine-tune model parameters as needed



## Architecture



**Universal Sentence Encoder Multilingual** provides multilingual word embeddings for the input terms.

**Hyperparameter tuning** ensures the model is optimized for the given input.

**K-Means** clustering generates high-level topics. **UMAP & HDBSCAN** identify more fine-grained groups.

**Labelling** differs per clustering type:

- K-Means**: Select the embedding with the highest cosine similarity to each cluster centroid.
- HDBSCAN**: Select the top three unigrams / bigrams per cluster with high TF-IDF values.



## Requirements

- ✓ Google Ads account
- ✓ Search-driven business
- ✓ Analyst / Engineer / Data Scientist



## Learn more



[github.com/google/ml\\_toast](https://github.com/google/ml_toast)

