

Ad Campaign A/B Analysis

Executive Summary

Executive Summary:

- Group B conversion rate: 0.974%; Group A: 0.588%
- ROI — B: 9.17, A: 10.34 (diff -1.18)
- Recommendation will be based on statistical significance and ROI.

Key Metrics:

- Group A: CR=0.588%, ROI=10.34
- Group B: CR=0.974%, ROI=9.17

Statistical Significance:

- RPU t-test p-value: 0.004; mean diff: 0.0078

Recommendations:

- No statistically significant lift; keep A and refine B.

Slide Summary

Ad Campaign A/B Analysis

- Auto-generated on pipeline run
- Dataset: campaign_data.csv

Executive Summary

- Group B conversion rate: 0.974%; Group A: 0.588%
- ROI — B: 9.17, A: 10.34 (diff -1.18)
- Recommendation will be based on statistical significance and ROI.

Background & Hypothesis

- Hypothesis: Test (B) improves conversion rate and ROI vs Control (A).
- Goal: Decide whether to scale variant B based on evidence.

Data & Methods

- Source: uploaded CSV (campaign_data.csv).
- Cleaning: normalized columns, parsed dates, removed zero reach rows.
- KPIs: Conversion Rate, Revenue per User, ROI, Cost per Purchase.
- Tests: proportion z-test (CR), Welch t-test (RPU).

Key Metrics & Findings

- Group A: CR=0.588%, ROI=10.34
- Group B: CR=0.974%, ROI=9.17

Statistical Significance

- RPU t-test p-value: 0.004; mean diff: 0.0078

Blockers & Assumptions

- Revenue column missing; used avg_order_value fallback.
- Assumed independent users and comparable traffic.
- Small sample sizes / unequal variance may affect t-test.
- Using pre-rendered PNG charts from reports/charts.

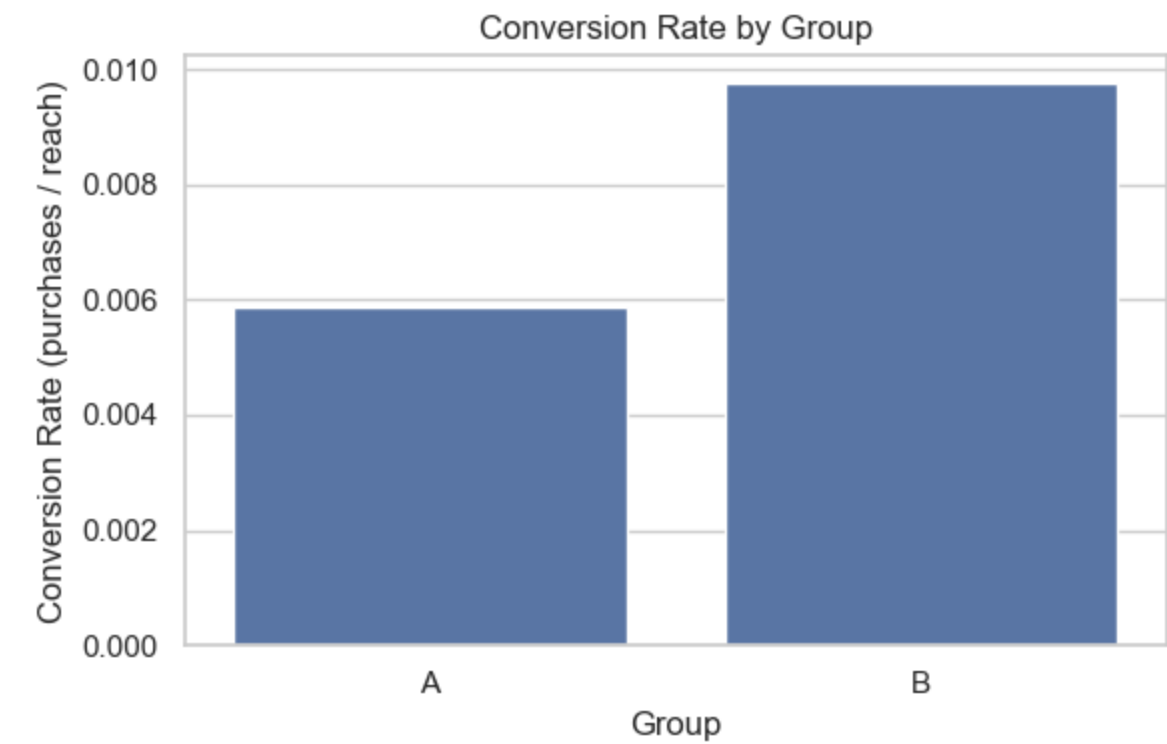
Recommendations

- No statistically significant lift; keep A and refine B.

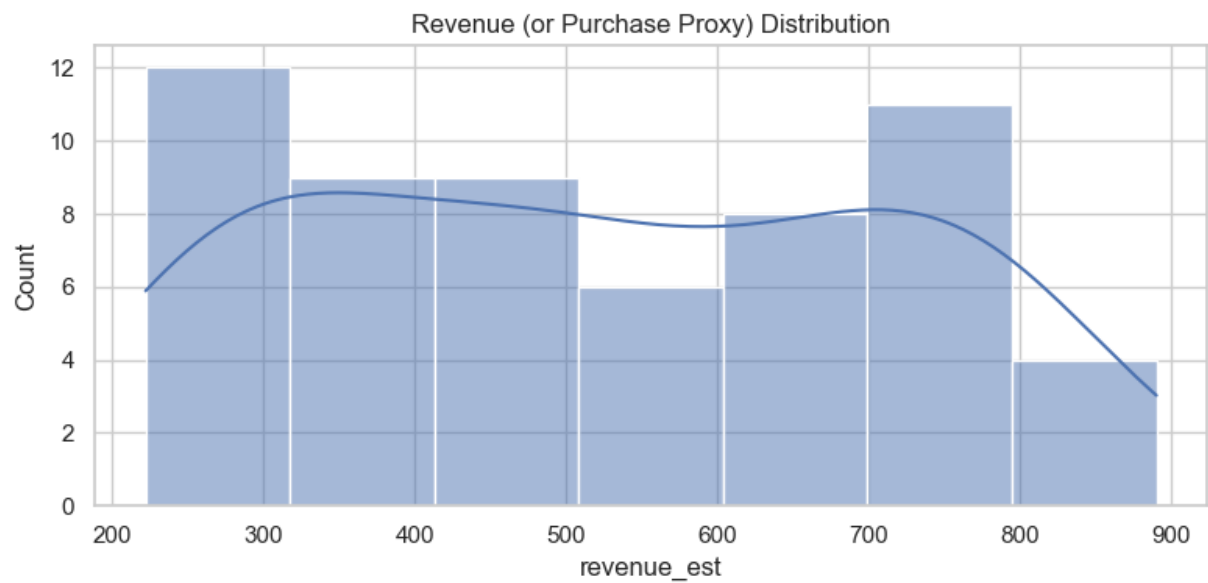
Appendix: Charts

- Conversion Rate by Group: reports/charts/conversion_rate_by_group.png
- Revenue Distribution: reports/charts/revenue_distribution.png
- Return of Investment : reports/charts/roi_comparison.png
- Purchases Over Time: reports/charts/ts_purchases_by_group.png
- Impressions Over Time: reports/charts/ts_impressions_by_group.png
- Spend Over Time: reports/charts/ts_spend_by_group.png
- Website Clicks Over Time: reports/charts/ts_clicks_by_group.png
- Conversion Funnel — Group A: reports/charts/funnel_group_A.png
- Conversion Funnel — Group B: reports/charts/funnel_group_B.png
- Spend vs Purchases — Group A: reports/charts/pie_spend_vs_purchases_group_A.png
- Spend vs Purchases — Group B: reports/charts/pie_spend_vs_purchases_group_B.png

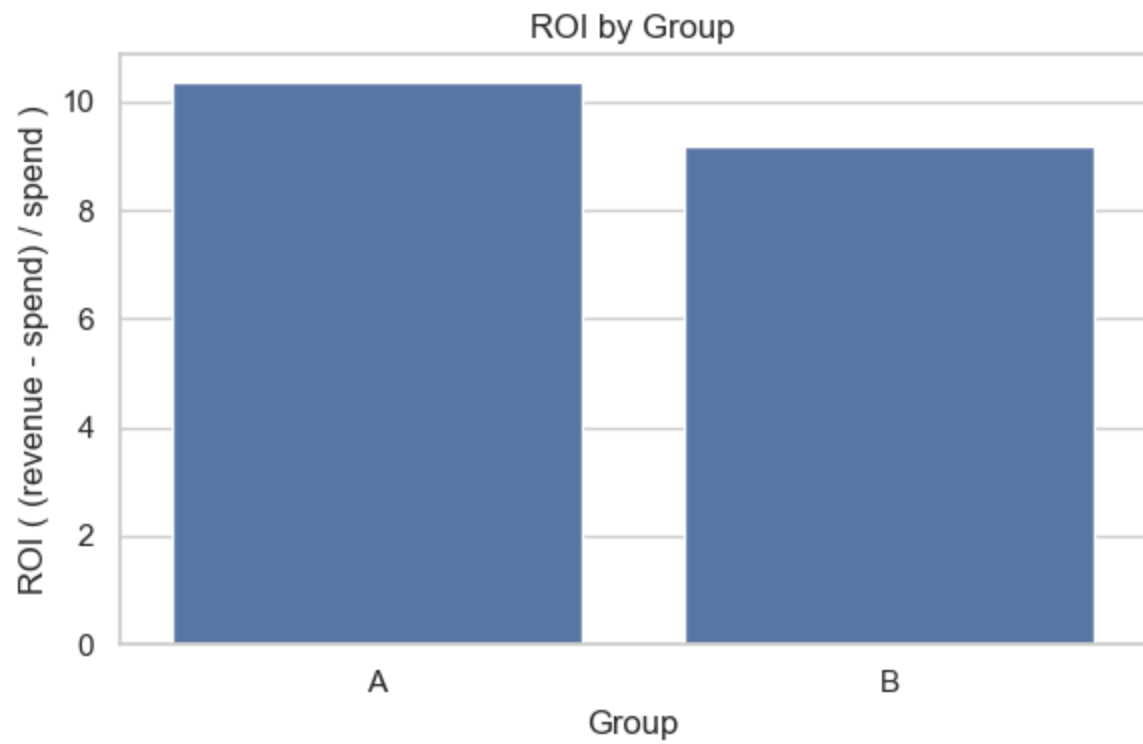
Charts



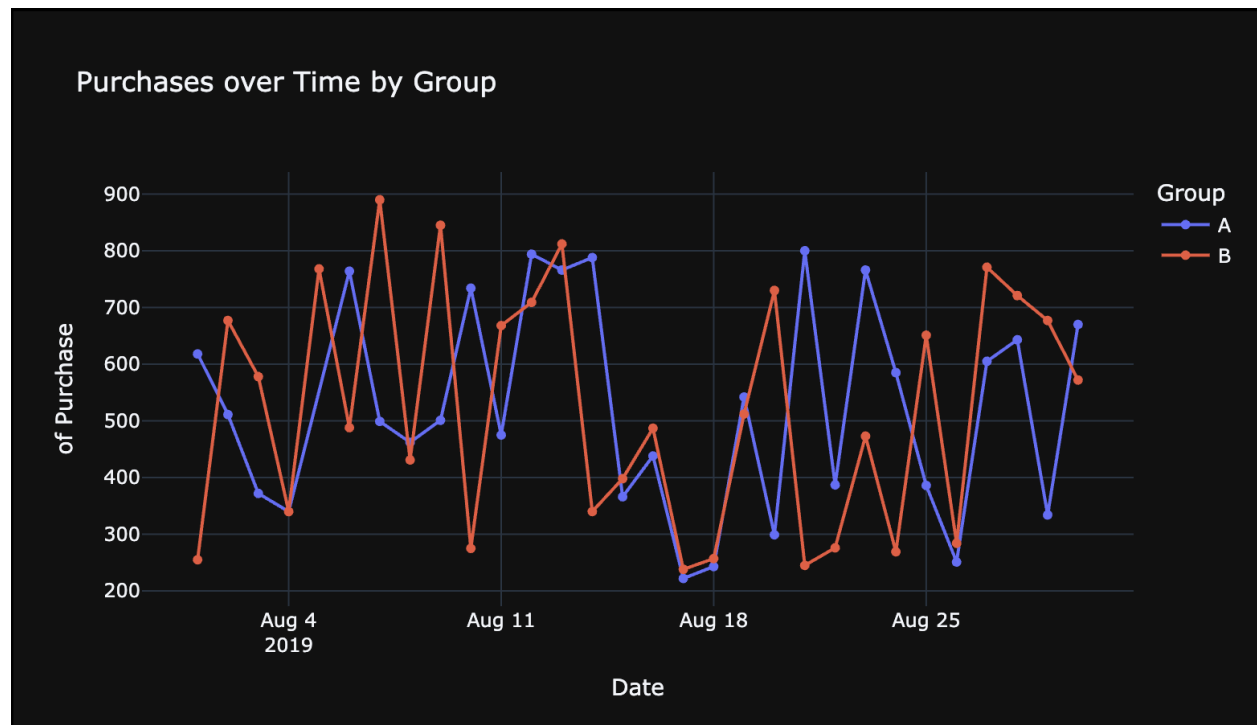
Conversion Rate by Group



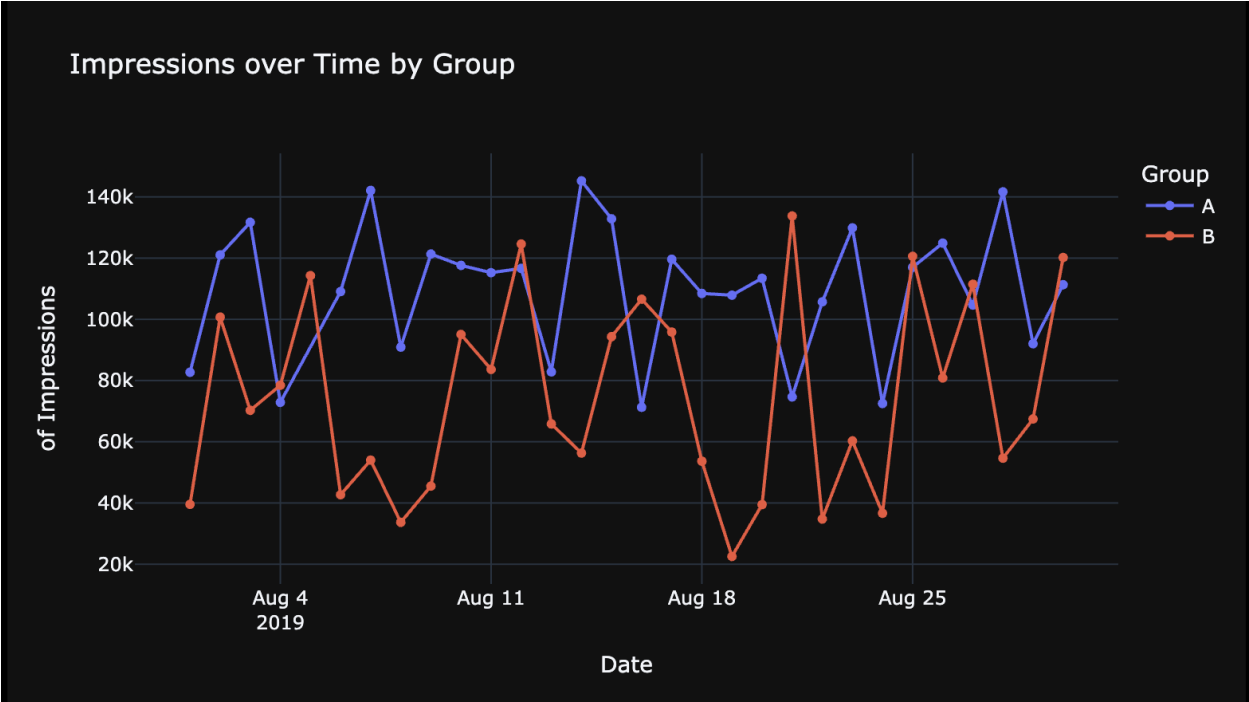
Revenue Distribution



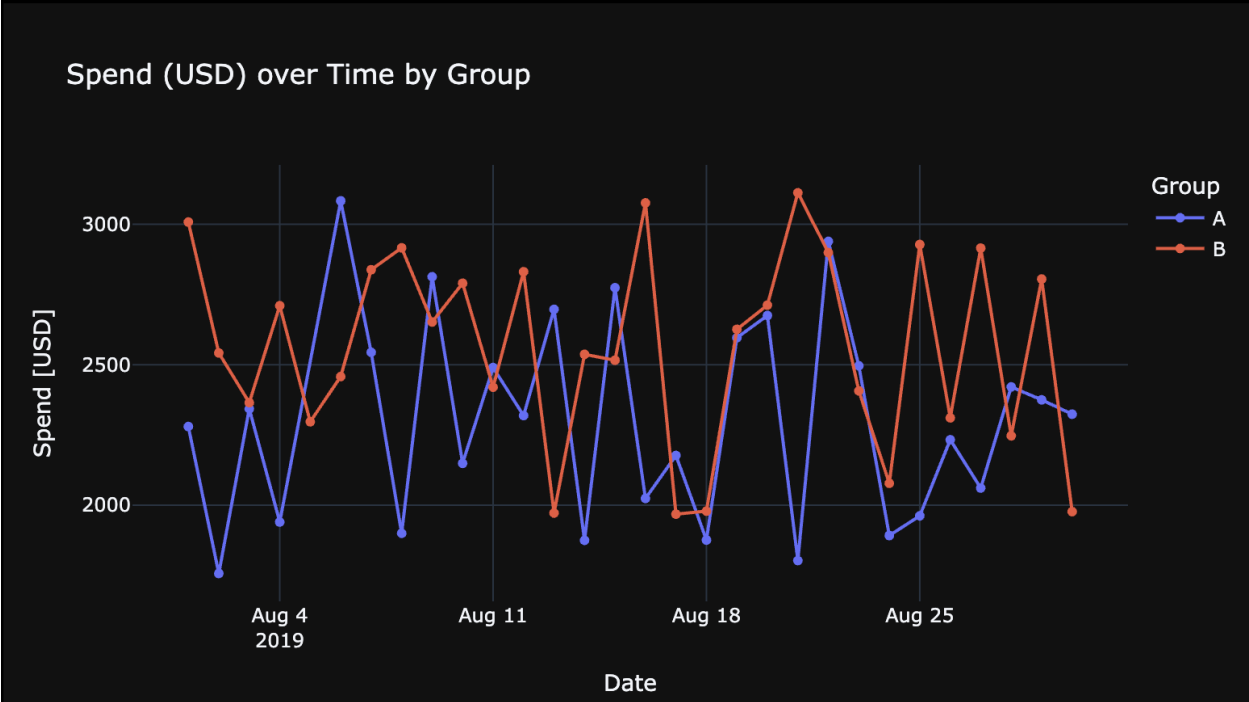
Return of Investment



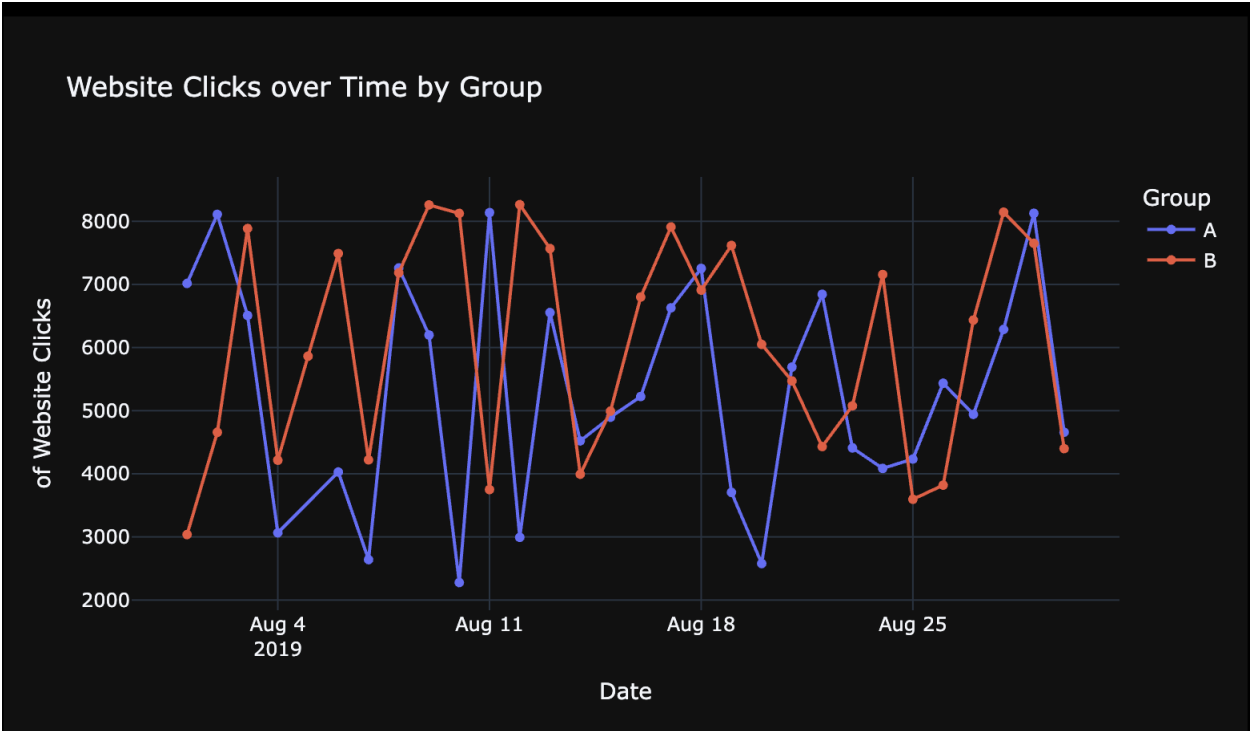
Purchases Over Time



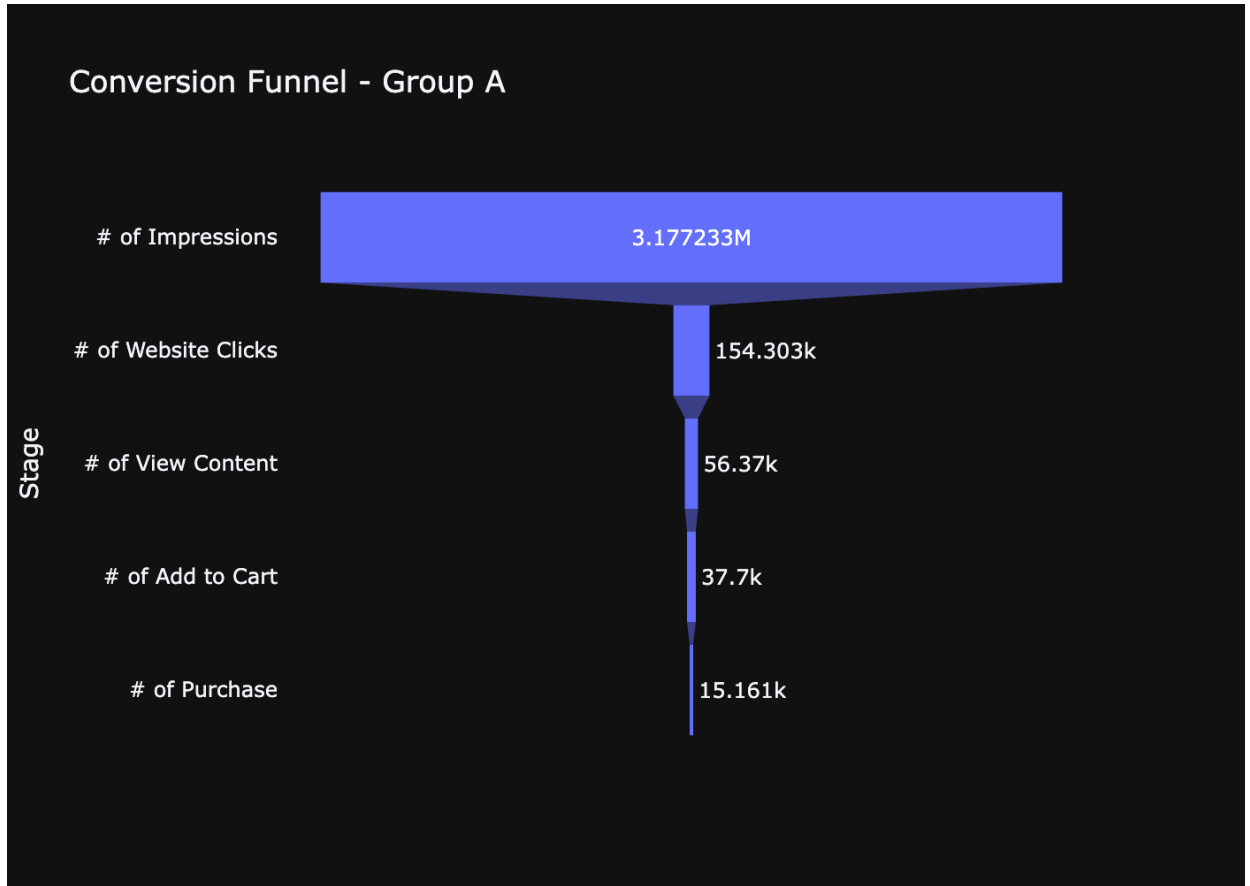
Impressions Over Time



Spend Over Time

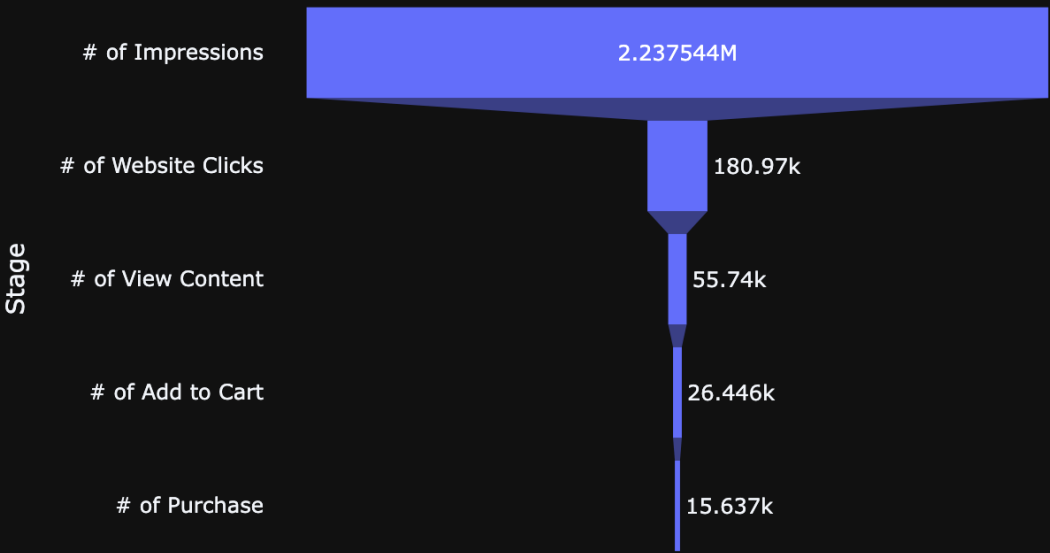


Website Clicks Over Time



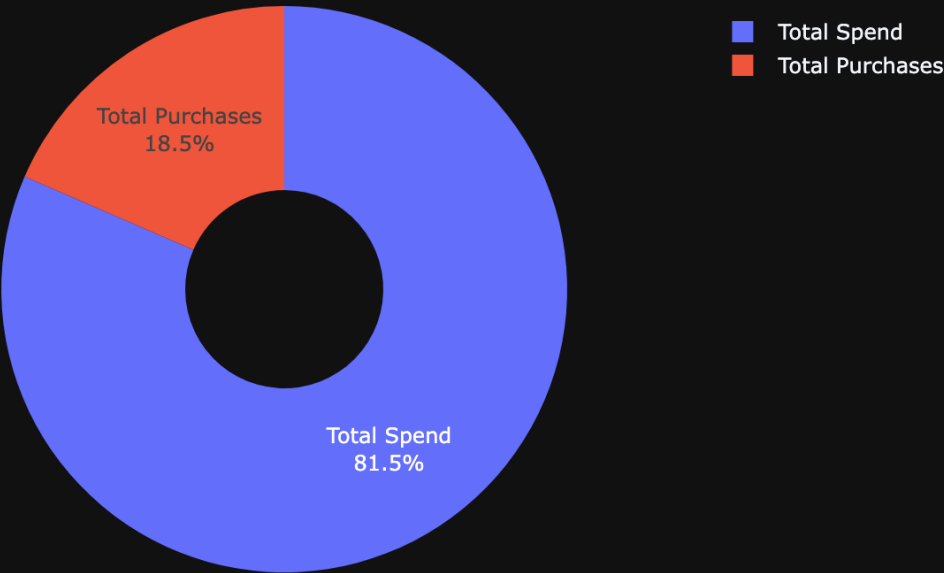
Conversion Funnel — Group A

Conversion Funnel - Group B



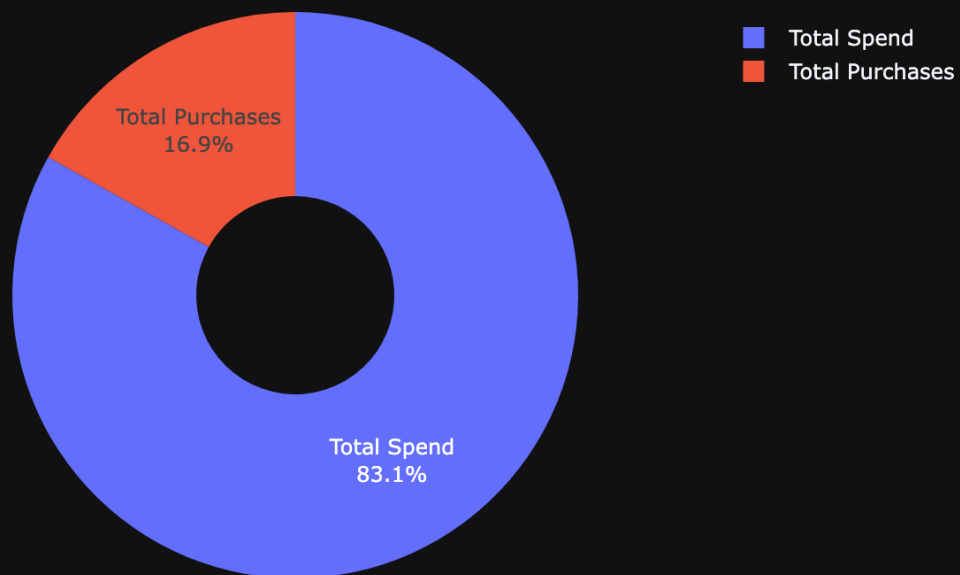
Conversion Funnel — Group B

Group A: Spend vs Purchases



Spend vs Purchases — Group A

Group B: Spend vs Purchases



Spend vs Purchases — Group B