Measuring Ad-Blocker Efficiency and Privacy

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INTRODUCTION

Online tracking can lead to third party sources learning about **YOUR** sensitive information.

They Know What You Clicked Last Summer
Percentage of global page loads tracked by the following companies

- Google — 64.4%
- facebook — 28.8%
- comSCORE — 12.2%
- Twitter — 11.0%
- amazon — 10.5%
- Yandex — 8.0%
- criteo. — 6.5%
- New Relic. — 5.9%

Based on the analysis of more than 144 million page loads by 850,000 users in more than 20 countries
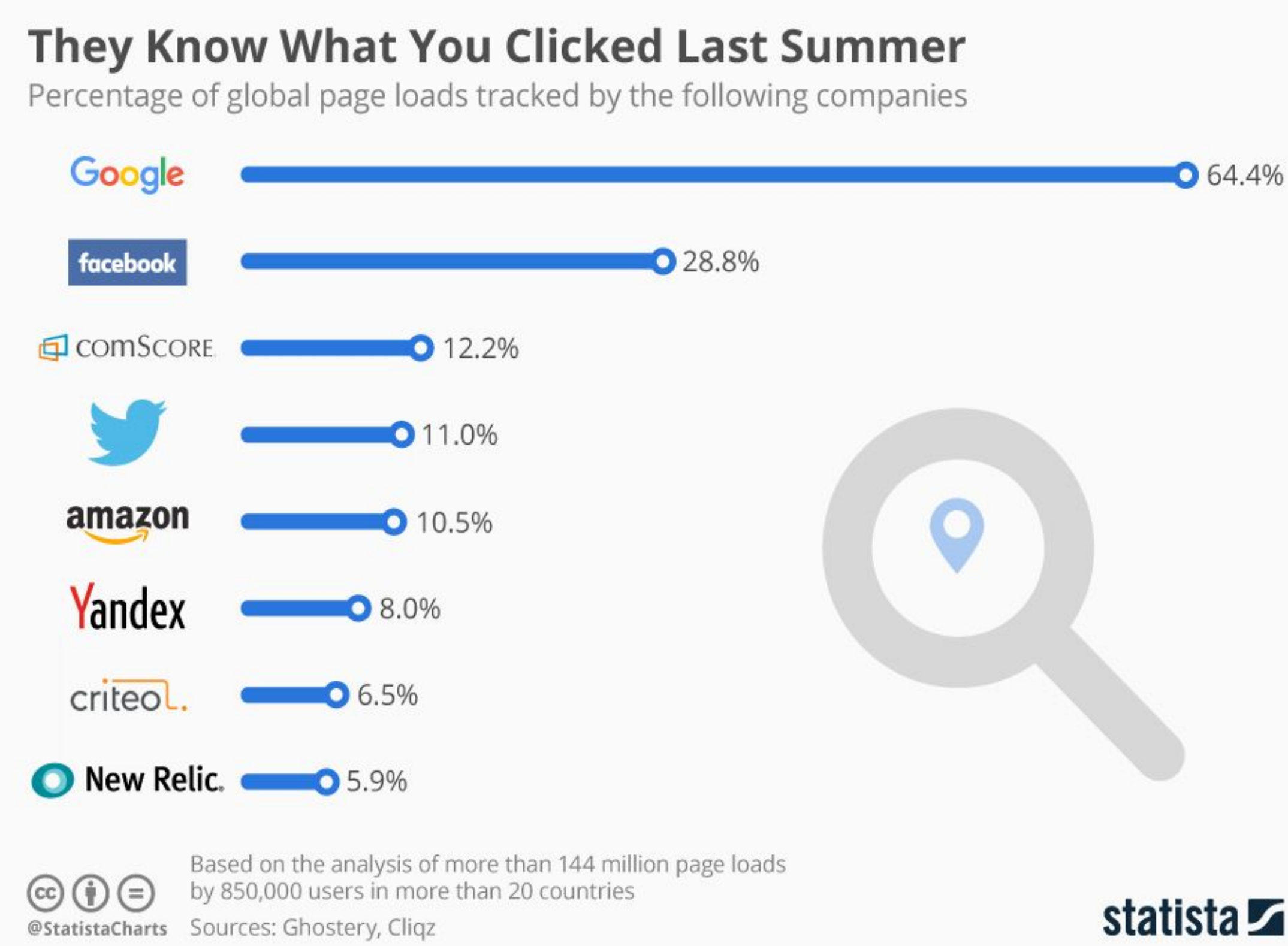@StatistaCharts Sources: Ghostery, Cliqz
statista

Figure 1

We aim to find the best possible ad blocker in terms of efficiency and privacy protection, by running experiments with the most popular ad blocker options on Fortune 250 websites.

Research Questions:
- Ad and tracker blockers are available, but do they live up to their expectations?
- How efficient are Ad Blockers?
- Does Ad Blocker performance vary with browsers?
- Which Ad Blocker + Browser combination is the most effective?

Goal: Measure the effectiveness of Ad Blockers across different browser settings and find the most effective one

METHODOLOGY

- We use HTTP Archive format (HAR) files to collect different analytics. To generate the HAR files, we use the Selenium Python library and the Browsermob Proxy Library to generate the HAR files
- To draw comparisons and conclusions between the efficiency of different ad blockers and browser combinations, we define a few metrics for measurement
  - Average Distinct Requests
  - Average Median Time
  - Average Ninety-Fifth Time
  - Average Maximum Calls to Top URL
  - Average Longest URL Call
- We run these experiments on Forbes Top 250 companies and draw comparisons and results. The flow of execution is shown in Figure 2
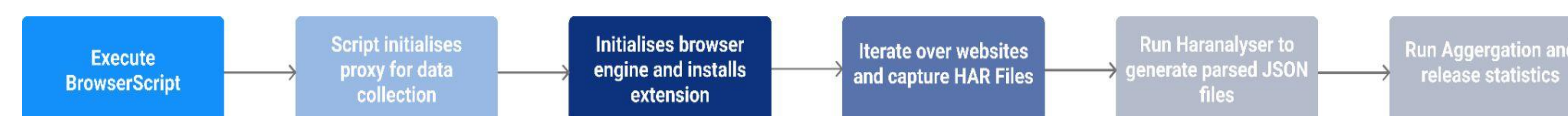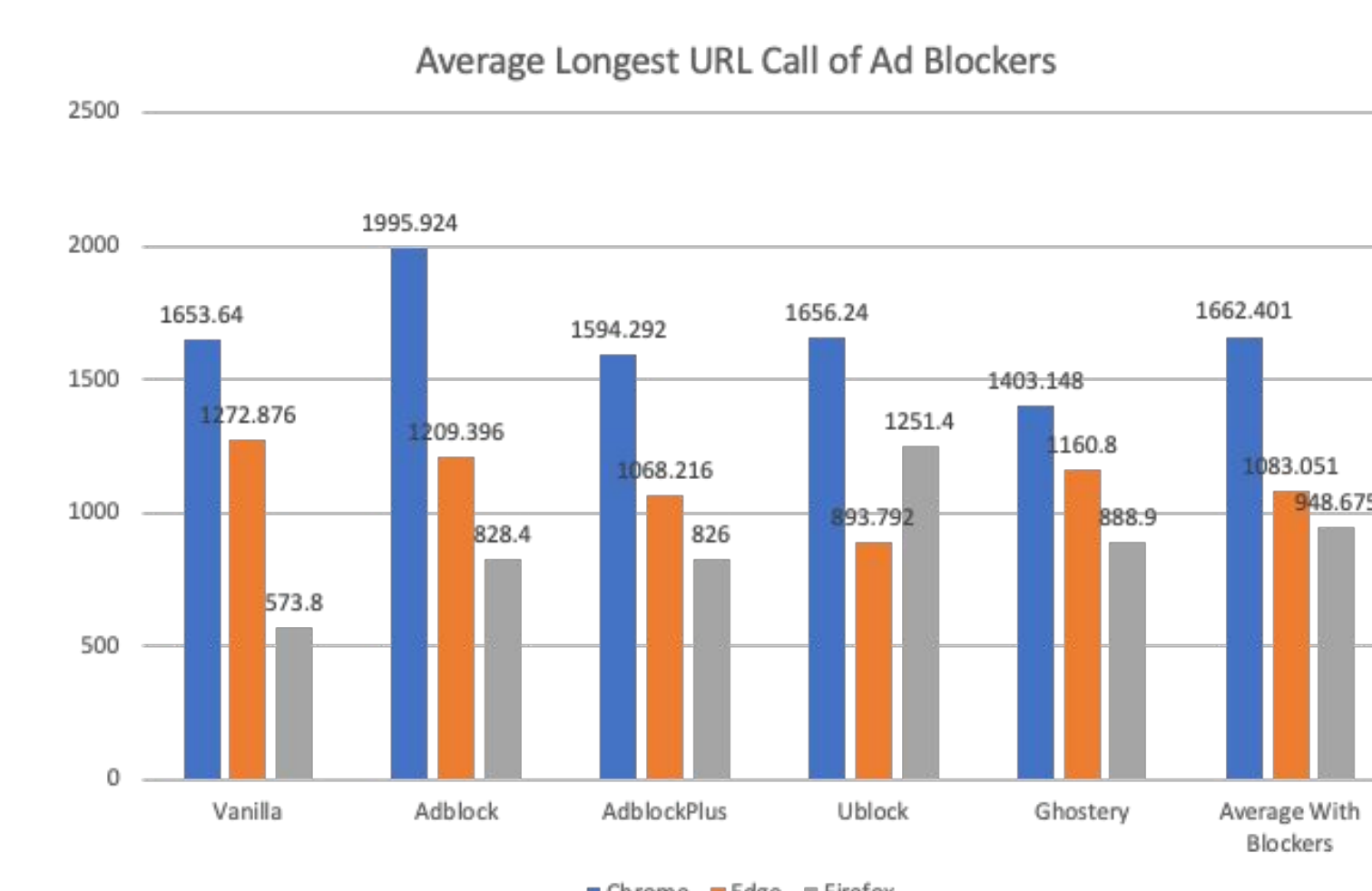

Execute BrowserScript → Script initialises proxy for data collection → Initialises browser engine and installs extension → Iterate over websites and capture HAR Files → Run Haranalyser to generate parsed JSON files → Run Aggergation and release statistics
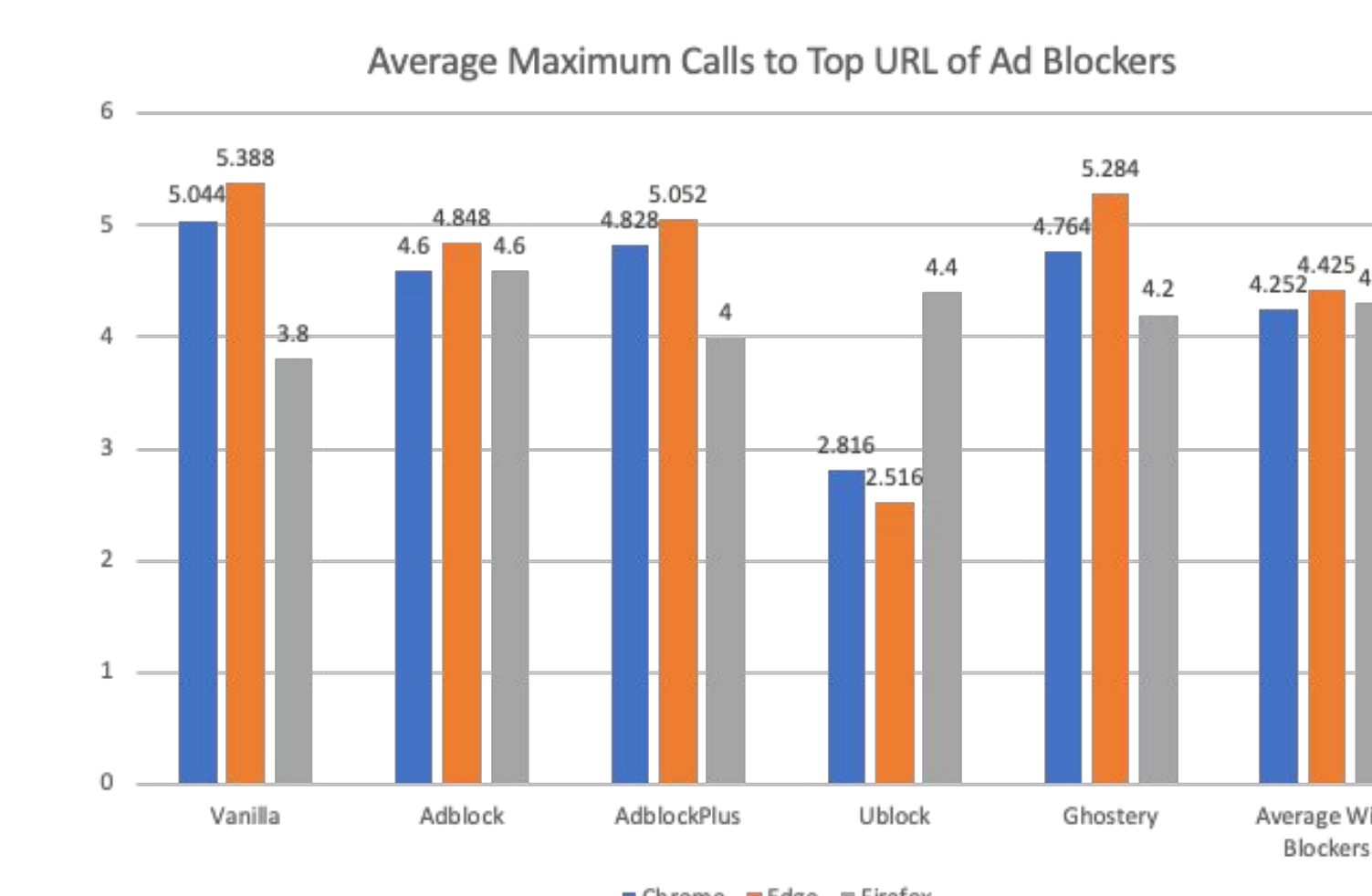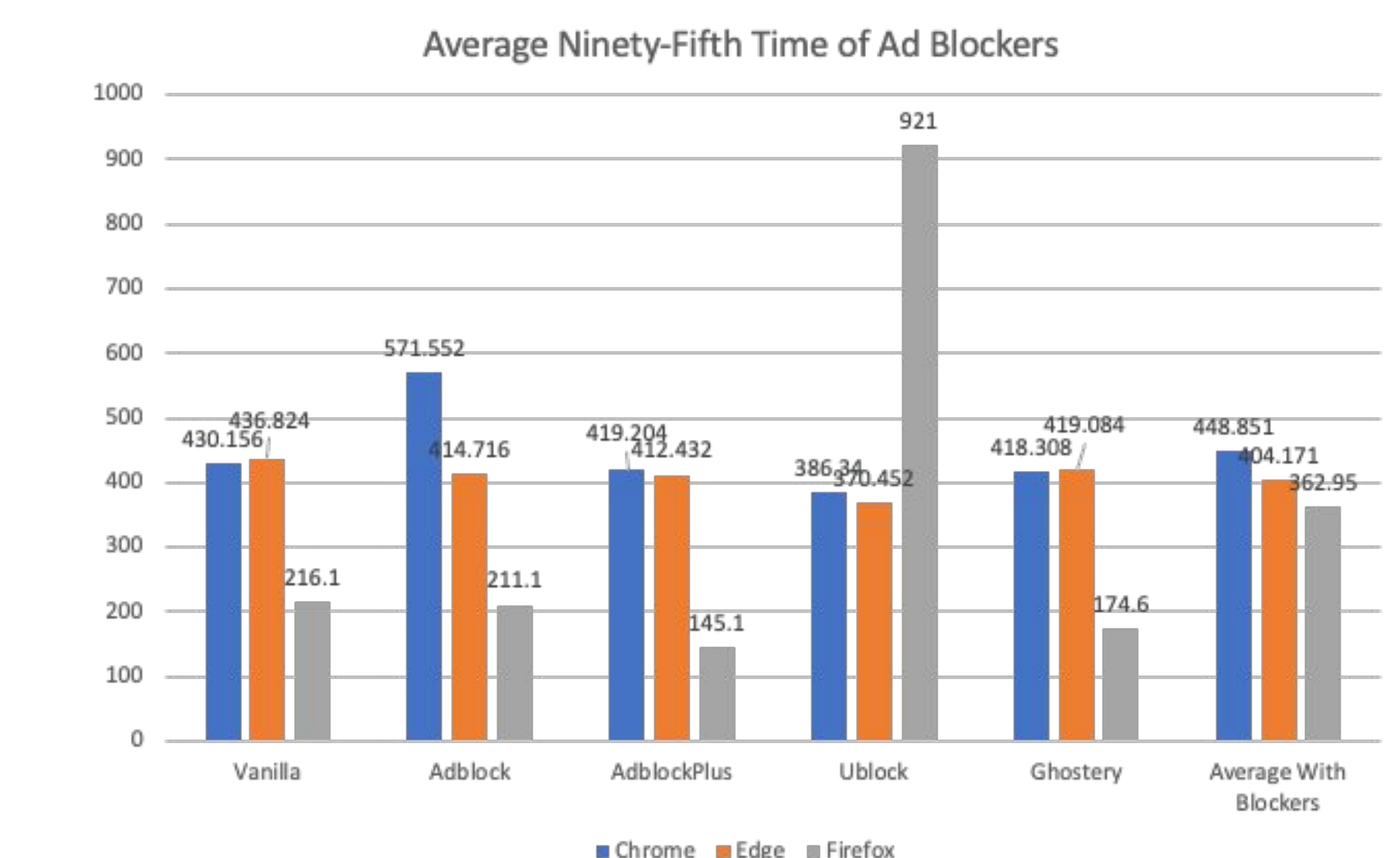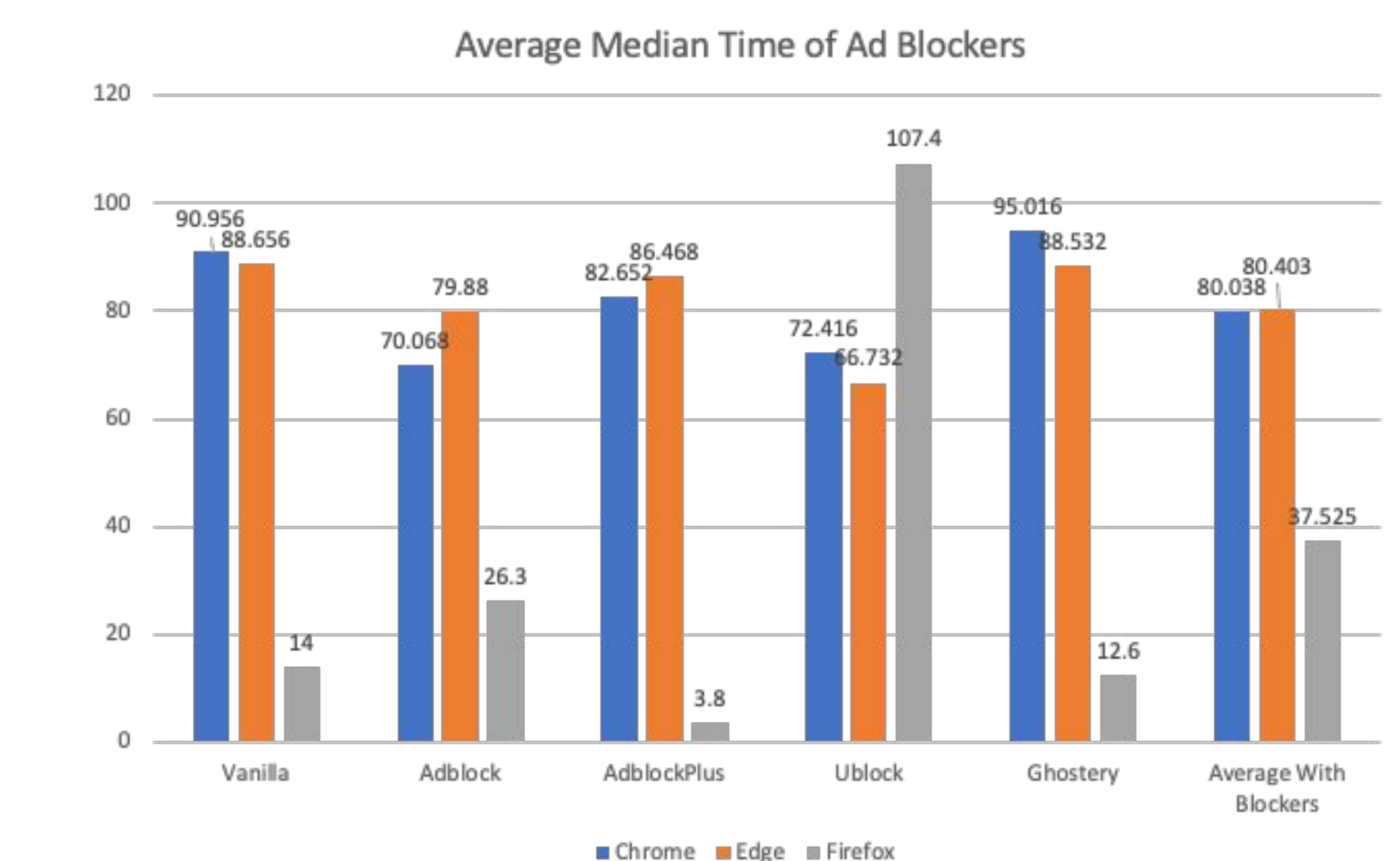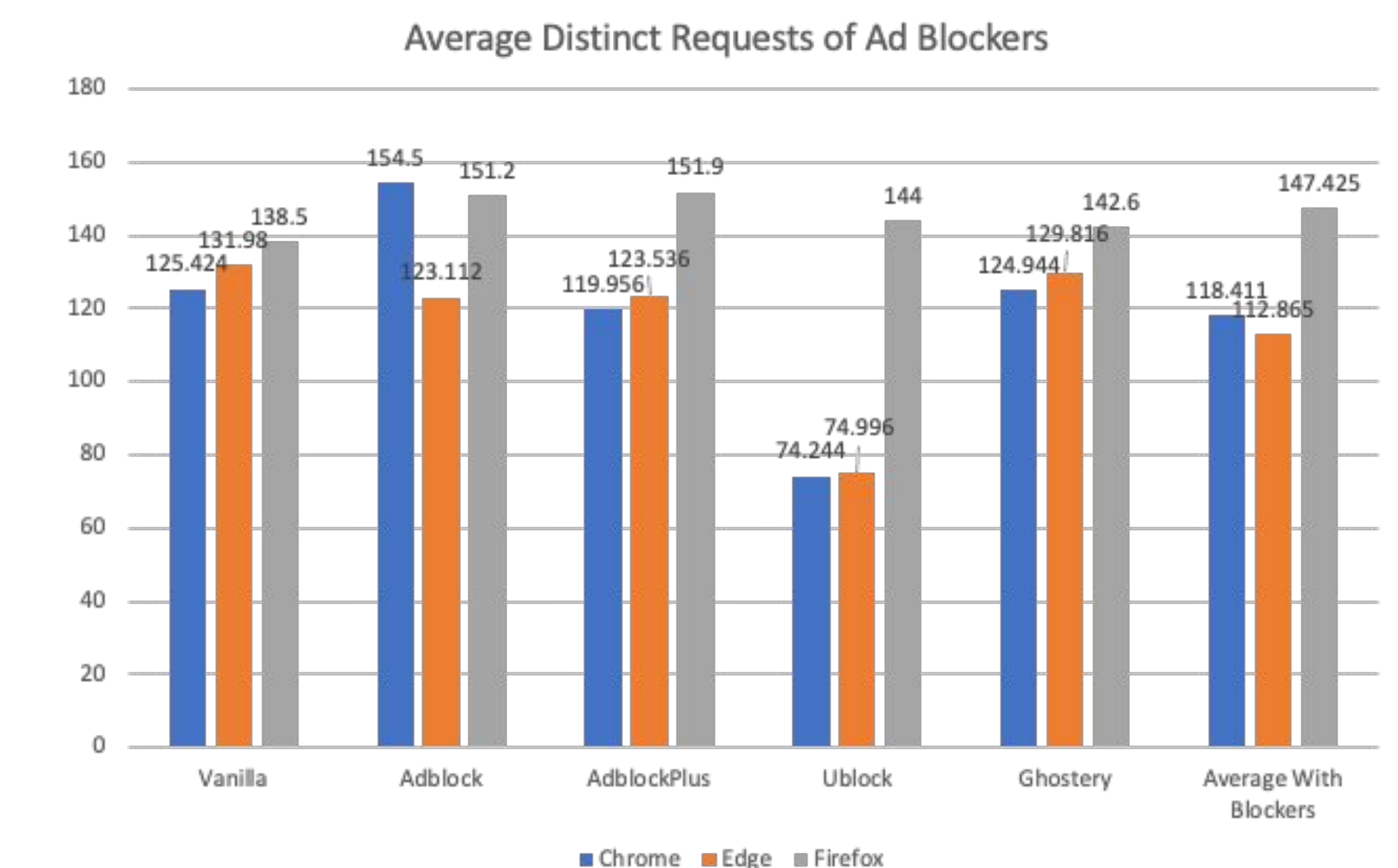
Figure 2

FINDINGS

- Blockers are blocking ads and tracking to some extent
- Best overall performance: UBlock
- Performance depends on browsers
- Firefox does not compile well with blockers

CHALLENGES & FUTURE WORK

- Gauging if HAR analysis is the best possible metric
- Using a uniform tool for data collection
- Trying to find if the tool delivers same performance across browsers
- Do ad-blocker extension across browser differ in performance?

RESULTS

Citations
Fig 1: Richter, Felix. *They Know What You Clicked Last Summer*, 17 Dec. 2017, https://www.statista.com/chart/12236/reach-of-companies-tracking-online-behavior/. Accessed 3 Dec. 2022.