



**UNITED STATES DISTRICT COURT  
SOUTHERN DISTRICT OF NEW YORK**

NETWORK-1 TECHNOLOGIES, INC.,

Plaintiff,

v.

GOOGLE LLC and YOUTUBE, LLC,

Defendants.

14 Civ. 2396 (PGG)

14 Civ. 9558 (PGG)

**PLAINTIFF NETWORK-1 TECHNOLOGIES, INC.'S  
SUPPLEMENTAL BRIEF IN OPPOSITION TO DEFENDANTS' MOTION FOR  
SUMMARY JUDGMENT**

[REDACTED]

## I. INTRODUCTION

Pursuant to the Court’s Order of July 11, 2022 (Dkt. # 266)<sup>1</sup>, Network-1 submits this supplemental brief in opposition to Google’s motion for summary judgment of non-infringement. This supplemental brief relates specifically to Google’s argument that the “Siberia” version of its ContentID system does not infringe because Google contends that it does not meet the “sublinear” claim element of the asserted ’988 and ’237 patents.

In its motion for summary judgment (Dkt. # 224), Google argued that its Siberia system used an allegedly linear search because it “searches a fixed percentage of the index.” Dkt. # 224 at 17. It further characterized Network-1’s assertion that the amount of the index to be searched was an adjustable variable designed to be adjusted as the size of the index grew as “baseless speculation” about “hypothetical circumstances.” Dkt. # 224 at 19.

Months after all summary judgment briefing was complete, Google produced additional discovery revealing that Google’s assertions about its Siberia system were false, or at a minimum deeply misleading. Documents provided for the first time in June of 2021 showed that Google had, in fact, made just the sort of adjustment to its Siberia search system that Network-1 had pointed to, confirming that Google’s system was designed to operate in a sublinear manner. Moreover, the supplemental discovery obtained by Network-1 long after summary judgment briefing ended showed that Google had actually made these changes in early 2020 – before it made the incorrect characterizations in its summary judgment briefing in September 2020. Google withheld this information from Network-1 and the Court, while making arguments directly contradicted by the withheld evidence. This evidence, and the parties’ dispute about the facts

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<sup>1</sup> All citations to Docket Numbers refer to the docket of the 2396 case, though the same

regarding how Google's system actually functions, reflect a genuine issue of material fact precluding summary judgment.

## II. NEW EVIDENCE CONFIRMS THAT THE SIBERIA VERSION OF GOOGLE'S CONTENT ID SYSTEM USES A SUBLINEAR SEARCH

The asserted claims of the '988 patent and the '237 patent include an element that the accused system identify an electronic work "based on a non-exhaustive search identifying a neighbor . . . wherein the non-exhaustive search is sublinear" ('988 claim 17); and using a "sublinear approximate nearest neighbor search" ('237 claim 33). Google's motion for summary judgment of non-infringement argued that the "Siberia" version of its accused Content ID system did not meet these claim elements because, according to Google, its search is not sublinear. Dkt. #224 at 16-21.<sup>2</sup>

Prior to the close of expert discovery, Google's system searched through [REDACTED] [REDACTED] of its system. Google argued in its summary judgment motion that this search constituted a "fixed fraction" [REDACTED] Dkt. # 224 at 17. Network-1's expert, Professor Mitzenmacher explained in his initial expert report that Google's Siberia system did not, in fact, search a "fixed fraction" [REDACTED]. He explained that the search of the Siberia system was designed to adapt to increases in the size of the data set by allowing it to adjust the portion of the index that was searched to preserve sublinear scaling. *See* Dkt. # 240 (Network-1 Opposition Brief) at 8-12 and evidence cited therein; Dkt. # 240-61 (Resp. Stmt of Genuine Issues) at ¶¶ 37, 50 and evidence cited therein. Indeed, Professor Mitzenmacher explained that it was incorrect to characterize the search of the Siberia system as examining a "fixed fraction" [REDACTED] [REDACTED] because that was an adjustable variable in the system. *Id.*

<sup>2</sup> Google's motion made arguments about the same claim elements for the earlier, "LSH" version of its system. While Google's arguments are incorrect for all of the reasons set forth in Network-1's opposition papers, that earlier system is not at issue in this supplemental brief as it was not

[REDACTED]

Google characterized Professor Mitzenmacher’s discussion of the design of the Siberia system’s search algorithm to allow adjustment of the portion of the index searched as “baseless speculation.” Dkt. # 224 at 19. Google argued that any adjustments would not result in sublinear scaling because “the source code [REDACTED] [REDACTED]” Dkt. # 224 at 21. Google made similar arguments in its reply, characterizing Professor Mitzenmacher’s discussion as describing “a *hypothetical* change that Google *might* make to its system.” Dkt. # 227 at 4 (emphasis in original).

**A. Google Produced New Evidence After Summary Judgment Contradicting Its Summary Judgment Arguments**

Pursuant to a stipulated order from the Magistrate Judge regarding a late-amendment to Google’s contention interrogatory responses, Network-1 propounded additional discovery on Google after the close of summary judgment briefing. In response to that discovery, Google produced documents in June 2021 showing that the search implemented by Google’s Siberia system had changed to examine only [REDACTED], rather than [REDACTED]. Ex. 86 at GOOG-NETWORK-00812409. Google’s witness confirmed in deposition testimony that this adjustment was made to reduce the computing resources utilized by the system. Ex. 87 (Konrad 2021 Depo) at 30:12-31:23. Thus, Google’s Siberia system was adjusted just as Professor Mitzenmacher had explained. Professor Mitzenmacher had explained that the supposedly “fixed percentage” [REDACTED] was not fixed at all. Even under Google’s flawed analysis of the system, that supposedly fixed percentage was changed [REDACTED] - showing that it was never “fixed” as Google argued.

Following the supplemental discovery, Professor Mitzenmacher issued a supplemental expert report explaining that this new evidence provided by Google further confirmed the sublinear nature of Google’s Siberia system and expressly refuted the arguments Google advanced on

[REDACTED]

summary judgment. Ex. 88 at ¶¶ 17-26. As Professor Mitzenmacher explained, “[r]educing the [REDACTED] to subject to further consideration) as the size of the data set increases results in sublinear scaling.” *Id.* at ¶ 22. Professor Mitzenmacher explains in detail why this is true. *Id.* at ¶¶ 23-24. He also explains how the new evidence provided by Google shows the falsity of Google’s summary judgment arguments. He explained that “Defendants’ own changes to Content ID Siberia Version reveal that the [REDACTED], [REDACTED], but rather a changeable parameter that they have in fact changed for performance reasons.” *Id.* at ¶ 25. Further, Professor Mitzenmacher explains that far from a “hypothetical” adjustment as Google argued in its summary judgment briefing, these adjustments were part of the design of the Siberia System search algorithm in order to allow the search to scale in a sublinear fashion. *Id.* at ¶ 26.

### **B. Google’s Summary Judgment Arguments Were False and Misleading When Google Made Them**

As discussed above, the material produced by Google only long after summary judgment briefing showed that Google’s summary judgment arguments about the nature and operation of its Siberia system were incorrect. Google’s summary judgment briefing mischaracterized the operation of its system in multiple ways, including its arguments that the system only ever searched a “fixed fraction” of the index, and that any changes to that supposedly “fixed fraction” were purely hypothetical. The Siberia system search was (and remains) sublinear as a consequence of the adjustability of the amount of the index searched as the size of the index grows over time. Network-1 only learned about these additional facts beginning in June 2021, when Google first produced documents referring to them, and later in November 2021 when it was finally able to take the deposition of a Google witness regarding those changes.

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