

**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)

**DECLARATION OF AMY E. HAYDEN IN SUPPORT OF PLAINTIFF NETWORK-1
TECHNOLOGIES, INC.'S OPENING CLAIM CONSTRUCTION BRIEF**

I, Amy E. Hayden, declare as follows:

1. I am an attorney with Russ, August & Kabat, counsel for Network-1 Technologies, Inc. in the above-captioned cases. I have personal knowledge of the facts states herein, and I could and would competently testify to them if asked to as a witness.

2. Attached as **Exhibit 1** is a true and correct copy of United States Patent Number 8,010,988, dated August 30, 2011.

3. Attached as **Exhibit 2** is a true and correct copy of United States Patent Number 8,205,237, dated June 19, 2012.

4. Attached as **Exhibit 3** is a true and correct copy of United States Patent Number 8,904,464, dated December 2, 2014.

5. Attached as **Exhibit 4** is a true and correct copy of Richard O. Duda & Peter E. Hart, Pattern Classification and Scene Analysis at 189-260 (Chapter 6, entitled “Unsupervised Learning and Clustering”) (1973).

6. Attached as **Exhibit 5** is a true and correct copy of Keinosuke Fukunaga, Introduction to Statistical Pattern Recognition at 508-63 (Chapter 11, entitled “Clustering”) (2d ed. 1990).

7. Attached as **Exhibit 6** is a true and correct copy of Peter N. Yianilos, *Excluded Middle Vantage Point Forests for Nearest Neighbor Search*, DIMACS Implementation Challenge: Near Neighbor Searches Workshop (1999).

8. Attached as **Exhibit 7** is a true and correct copy of Peter N. Yianilos, *Locally Lifting the Curse of Dimensionality for Nearest Neighbor Search*, Symposium on Discrete Algorithms (SODA, 2000).

9. Attached as **Exhibit 8** is a true and correct copy of excerpts from Paul C. Denny, *Search and Enumeration Techniques for Incidence Structures*, CDMTCS Research Report Series (1998).

10. Attached as **Exhibit 9** is a true and correct copy of excerpts from Jon Orwant et al., *Mastering Algorithms with Perl* (1999).

11. Attached as **Exhibit 10** is a true and correct copy of United States Patent Number 7,831,438, dated November 9, 2010.

12. Attached as **Exhibit 11** is a true and correct copy of United States Patent Number 8,065,733, dated November 22, 2011.

13. Attached as **Exhibit 12** is a true and correct copy of excerpts from Webster's New World Dictionary (3d ed.1994).

14. Attached as **Exhibit 13** is a true and correct copy of Orjan Carlborg et al., *The Use of a Genetic Algorithm for Simultaneous Mapping of Multiple Interacting Quantitative Trait Loci*, 155 Genetics 2003-10 (2000).

15. Attached as **Exhibit 14** is a true and correct copy of Frederic Dufaux & Fabrice Moscheni, *Background Mosaicking for Low Bit Rate Video Coding*, Proc. 3d IEEE Int'l Conference on Image Processing (1996).

16. Attached as **Exhibit 15** is a true and correct copy of G.I. Robertson et al., *Non-Exhaustive Search Methods and Their Use in the Minimization of Reed-Muller Canonical Expansions*, 80 Int. J. Electronics 1-12 (1996).

17. Attached as **Exhibit 16** is a true and correct copy of Sudhir Kumar, *A Stepwise Algorithm for Finding Minimum Evolution Trees*, 13 Molecular Biology & Evolution 584-93 (1996).

I declare under penalty of perjury that the forgoing is true and correct. Executed this 30th day of May 2019 at Los Angeles, California.

A handwritten signature in black ink, appearing to read "A. Hayden", written over a horizontal line.

Amy E. Hayden