IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

HULU, LLC; AMAZON.COM, INC., and NETFLIX, INC., Petitioners

v.
REALTIME ADAPTIVE STREAMING LLC,
Patent Owner.

Case No. Unassigned Patent 8,934,535

DECLARATION OF JAMES A. STORER, PH.D.

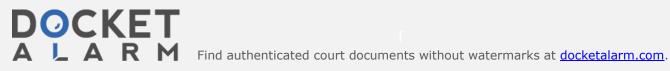


TABLE OF CONTENTS

I. Ba	ckground and Qualifications	1
A.	Compensation	5
B.	Materials and Other Information Considered	5
II. Un	derstanding of the Law	5
A.	Legal Standard for Prior Art	5
1.	Anticipation and Prior Art.	6
B.	Obviousness	8
C.	Legal Standard for Claim Construction	13
III. Le	vel of Ordinary Skill in the Art	18
IV. Overview of the Technology		19
A.	Overview of the '535 Patent	19
B.	Observations on the '535 Patent	25
V. Th	V. The '535 Patent	
A.	Challenged Claims	32
B.	'535 Patent Prosecution History	33
VI. Cla	VI. Claim Construction	
A. comp	"asymmetric compressors" / "compressors using asymmetric data pression"	35
B.	"data block"	36
C.	"access profiles"	38
VII. Su	VII. Summary of the Prior Art	
A.	Imai (Exhibit 1004)	40
B.	Ishii (Ex. 1007)	45
VIII.	Invalidity	47
A.	Ground 1: Claims 1-14 are Rendered Obvious by Imai and Ishii	48
1.	Independent Claim 1 is Obvious	54
2.	Independent Claim 14 is Obvious	72
3.	Dependent Claim 2 is Obvious	77



	4.	Dependent Claim 3 is Obvious	79
	5.	Dependent Claims 10 and 11 are Obvious	80
	6.	Dependent Claim 6 is Obvious	82
	7.	Dependent Claims 4 and 5 are Obvious	89
	8.	Dependent Claim 7 is Obvious	90
	9.	Dependent Claim 8 is Obvious	94
	10.	Dependent Claim 9 is Obvious	97
	11.	Dependent Claim 12 is Obvious	99
	12.	Dependent Claim 13 is Obvious	101
X.	Res	servation of Rights	102
Ap	pend	lix 1: Curriculum Vitae of James A. Storer	104
Ap	pend	lix 2: Materials Considered in the Preparation of This Declaration	1
Ap	pend	lix 3: Challenged Claims	2
Appendix 4: Mapping Between Imai U.S. Patent and Imai (English Translation of IP Publication)			



I, James A. Storer, declare as follows:

- 1. My name is James A. Storer. I am a Professor of Computer Science at Brandeis University and a member of the Brandeis Center for Complex Systems. I have prepared this report as an expert witness retained by Hulu, LLC ("Petitioner"). In this report I give my opinions as to whether certain claims of U.S. Patent No. 8,934,535 ("the '535 Patent") are invalid. I provide technical bases for these opinions as appropriate.
- 2. This report contains statements of my opinions formed to date and the bases and reasons for those opinions. I may offer additional opinions based on further review of materials in this case, including opinions and/or testimony of other expert witnesses. I make this declaration based upon my own personal knowledge and, if called upon to testify, would testify competently to the matters contained herein.

I. <u>BACKGROUND AND QUALIFICATIONS</u>

- 3. I have summarized in this section my educational background, career history, publications, and other relevant qualifications. My full curriculum vitae is attached as Appendix 1 to this declaration.
- 4. I am an expert in the field of computer algorithms, including data communications and network computing, data compression, data and image retrieval, storage and processing of large data sets, and image / video processing. I



have studied, taught, practiced, and researched in the field of Computer Science for over thirty years. Currently, I am Professor of Computer Science at Brandeis University in Waltham, Massachusetts, where I have been on the faculty since 1981.

- 5. I received my Doctor of Philosophy (Ph.D.) degree in the field of Computer Science from Princeton University in 1979. I received my Masters of Arts (M.A.) degree in Computer Science from Princeton University and my Bachelor of Arts (B.A.) degree in Mathematics and Computer Science from Cornell University.
- 6. After receiving my Ph.D. degree, I worked in industry as a researcher at AT&T Bell Laboratories from 1979 to 1981 before joining the faculty of Brandeis University.
- 7. I have been involved in computer science research since 1976. My research has been funded by a variety of governmental agencies, including the National Science Foundation (NSF), National Aeronautics and Space Administration (NASA), and Defense Advanced Research Projects Agency (DARPA). In addition, I have received government Small Business Innovation Research (SBIR) funding, as well as numerous industrial grants.
- 8. I regularly teach courses in software and hardware technology for data compression and communications (including text, images, video, and audio) at both the undergraduate and graduate level, and in my capacity as co-chair of the



DOCKET

Explore Litigation Insights



Docket Alarm provides insights to develop a more informed litigation strategy and the peace of mind of knowing you're on top of things.

Real-Time Litigation Alerts



Keep your litigation team up-to-date with **real-time** alerts and advanced team management tools built for the enterprise, all while greatly reducing PACER spend.

Our comprehensive service means we can handle Federal, State, and Administrative courts across the country.

Advanced Docket Research



With over 230 million records, Docket Alarm's cloud-native docket research platform finds what other services can't. Coverage includes Federal, State, plus PTAB, TTAB, ITC and NLRB decisions, all in one place.

Identify arguments that have been successful in the past with full text, pinpoint searching. Link to case law cited within any court document via Fastcase.

Analytics At Your Fingertips



Learn what happened the last time a particular judge, opposing counsel or company faced cases similar to yours.

Advanced out-of-the-box PTAB and TTAB analytics are always at your fingertips.

API

Docket Alarm offers a powerful API (application programming interface) to developers that want to integrate case filings into their apps.

LAW FIRMS

Build custom dashboards for your attorneys and clients with live data direct from the court.

Automate many repetitive legal tasks like conflict checks, document management, and marketing.

FINANCIAL INSTITUTIONS

Litigation and bankruptcy checks for companies and debtors.

E-DISCOVERY AND LEGAL VENDORS

Sync your system to PACER to automate legal marketing.

