# UNITED STATES PATENT AND TRADEMARK OFFICE

### BEFORE THE PATENT TRIAL AND APPEAL BOARD

Akamai Technologies, Inc. Petitioner

V.

Limelight Networks, Inc.
Patent Owner

U.S. Patent No. 8,750,155 Claims 1, 8, and 13

Case IPR2017-00348

DECLARATION OF DR. SAMRAT BHATTACHARJEE ON BEHALF OF PETITIONER



## TABLE OF CONTENTS

			<u>Page</u>
I.	Legal Principles		5
	A.	Anticipation	5
	B.	Obviousness	7
	C.	Indefiniteness	10
II.	Claim Construction		11
	A.	District Court Constructions	11
	B.	Data Source Construction	12
III.	Leve	el of Ordinary Skill In The Art	14
IV.	Sum	nmary of Opinions	14
V.	Overview of the '155 patent		14
	A.	Background Technology	15
	B.	Alleged Invention of the '155 Patent	17
	C.	Challenged Claims	21
	D.	Prosecution History	22
VI.	Overview of the Prior Art		22
	A.	Devanneaux	23
	B.	Overview of Chu	29
	C.	Motivation to Combine Devanneaux and Chu	31
	D.	Haverstock	37
	E.	Motivation to Combine Devanneaux and Haverstock	37
VII.	INVALIDITY OF THE CHALLENGED CLAIMS		39
	A.	Independent Claim 1	39
	B.	Dependent Claim 8	61
	C.	Independent Claim 13	65
VIII.	Ava	ilability for Cross-Examination	74
IX.	Right to Supplement		74



- I, Samrat Bhattacharjee, declare as follows:
  - 1. My name is Samrat Bhattacharjee.
- 2. I received a Ph.D. in Computer Science in 1999 from the Georgia Institute of Technology. In 1994, I received a B.S. degree *summa cum laude* in Mathematics and in Computer Science from Georgia College and State University. I was a Teaching Assistant at the Georgia Institute of Technology from 1994 to 1995 and an Instructor in 1998.
- 3. From 1999 through 2005, I was an Assistant Professor at the University of Maryland, College Park, in the Department of Computer Science, and then an Associate Professor with tenure from 2005 through 2009. In 2006, I was a Visiting Professor at the Max Planck Institut für Software Systems, Saarbrücken, Germany. In 2007, I was a Visiting Researcher at AT&T Labs, Florham Park, New Jersey.
- 4. Since 2009, I have been a tenured Professor at the University of Maryland. My teaching and research have focused on computer networking including all aspects of the technologies pertaining to the patents-in-suit. My early work as a graduate student on anycasting was a pre-cursor to CDNs; I've worked extensively on in-network caching, media streaming, content delivery, and protocol optimization and security.



- 5. I have served as a reviewer for ACM/IEEE Transactions on Networking, IEEE Journal on Selected Areas in Communications, Computer Communications Journal (Special Issue on Network Security), ACM Transactions on Computer Systems, Performance Evaluation Journal, Computer Communications Review, European Transactions on Telecommunications, IEEE Transactions on Parallel and Distributed Systems, and ACM Transactions on Internet Technology.
- 6. I am the author of numerous publications in the field of computer networking, including journal articles, book chapters, publications in proceedings, technical reports, and invited papers.
- 7. I have been active in a number of professional organizations and conferences. I have served with the NSF Workshop on Network Testbeds, the NSF Networking Research Panel, the Department of Education High Performance Networking Panel, and as an Evaluator for the Intel Science Talent Search.
- 8. I have received several honors and awards. These include: the Alfred P. Sloan Jr. Fellowship; the Best Paper Award, 14th Annual IEEE International Conference on High Performance Computing (HiPC) (with Vijay Gopalakrishnan, Ruggero Morselli, Peter J. Keleher, and Aravind Srinivasan); the Best Paper Award, 7th IEEE/ACM Conference on Grid Computing (with Jiksoo Kim, Byomsuk Nam, Peter Keleher, Michael Marsh, and Alan Sussman); and the NSF



CAREER Award. I also received Teaching Excellence Awards in 2004, 2008, and 2012.

- 9. I am the co-director of a new joint Ph.D. program in Computer Science between the University of Maryland and the Max Planck Society in Germany.
- 10. I am the co-inventor of four patents: U.S. Patent No. 7,181,623 (entitled "Scalable Wide-Area Upload System and Method"); U.S. Patent No. 7,940,850 (entitled "Method for Encoding Frame Data"); U.S. Patent No. 8,397,284 (entitled "Detection of Distributed Denial of Service Attacks in Autonomous System Domains"); and U.S. Patent No. 8,554,941 (entitled "Systems and Methods for Distributing Video on Demand")
- 11. Additional details of my technical education, work experience, publications, and awards and honors are contained in my curriculum vitae. A copy of my curriculum vitae is attached as Appendix A.
- 12. I have reviewed the specification, claims and file history of U.S. Patent No. 8,750,155. ("'155 patent")(Ex. 1001). The '155 patent issued from USAN 13/595,904 (filed on August 27, 2012) and claims priority to PCT Application No. PCT/US2009/038361 (filed on March 26, 2009). (*Id.* at cover page).



# 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.

