### UNITED STATES PATENT AND TRADEMARK OFFICE

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## BEFORE THE PATENT TRIAL AND APPEAL BOARD

FACEBOOK, INC.
Petitioner
v.

## WINDY CITY INNOVATIONS LLC Patent Owner

Patent No. 8,694,657 Issue Date: April 08, 2014 Title: REAL TIME COMMUNICATIONS SYSTEM

## DECLARATION OF DR. JAIME G. CARBONELL, PH.D.

Case No. IPR2016-01159

IPR2016-01159 – Ex. 2005 Windy City Innovations LLC Patent Owner



I, Jaime G. Carbonell, Ph.D., hereby declare and state as follows:

#### A. Introduction

1. I have been asked by counsel for Patent Owner Windy City
Innovations LLC to review U.S. Patent No. 8,694,657 (the "657 Patent"), to
describe the level of ordinary skill in the relevant art of the '657 Patent as of April
1, 1996, and to provide my technical review, analysis, insights, and opinions
regarding the '657 Patent in view of the prior art cited by Petitioner Facebook Inc.
I submit this declaration in support of Patent Owner's response in this IPR
proceeding. I have personal knowledge of the matters stated herein and would be
competent to testify to them if required.

## **B.** Background and Qualifications

- 2. I received Bachelor of Science degrees in both Physics and Mathematics in 1975 from the Massachusetts Institute of Technology. I received M.S., M.Phil., and Ph.D. degrees in Computer Science from Yale University in 1976, 1977, and 1979, respectively.
- 3. I have held the position of Allen Newell Professor of Computer Science at Carnegie Mellon University from 1995 to the present. I currently also hold the title of Director of the Language Technologies Institute at Carnegie Mellon University. I first joined Carnegie Mellon as an Assistant Professor of Computer Science in 1979. In 1987, I was appointed as a Professor of Computer



Science at Carnegie Mellon.

Since 1979 I have taught a wide variety of graduate and 4. undergraduate courses at Carnegie Mellon that fall within the general field of Computer Science, including courses in software engineering, data mining, natural language processing, electronic commerce, and artificial intelligence. I have been involved in a number of different professional organizations and activities, including memberships in the Association of Computing Machinery ("ACM"), the Association for the Advancement of Artificial Intelligence ("AAAI"), and the Cognitive Science Society. I have also held leadership positions within professional organizations. From 1983 to 1985, I served as Chair of the ACM's Special Interest Group on Artificial Intelligence ("SIGART"). From 1988 to the present, I have been a Fellow of the AAAI. From 1990 to 1992, I served on the AAAI executive committee. I have also served on a number of different government committees, including the Computer, Information Science & Engineering Advisory Committee of the National Science Foundation (2010 to 2014); the Human Genome Scientific Advisory Committee to the National Institute of Health, also known colloquially as the "Watson Committee" (from 1988 through 1992); and the Scientific Advisory Committee of the Information Access Division of the National Institute of Standards and Technology (from 1997 through 2001).



- 5. I am an author or co-author on more than 330 technical papers published as invited contributions and/or in peer-reviewed journals or conferences. These papers present the results of my research, which is generally directed at computer implemented algorithms and methods that relate to machine learning, including such applications as mapping protein sequences to three-dimensional shapes, predicting protein folds, detecting financial fraud, and also related to natural language processing including performing inter-lingual machine translation, parsing natural language (a.k.a. "content analysis") and text mining and to various forms of storage and communication of data. I have served as an editor and peer-reviewer for a number of different technical journals in my field, including the Machine Learning Journal (from 1984 through 2000), the Machine Translation Journal (the 1980's), and the Artificial Intelligence Journal (1984) through 2008). I was also a co-Editor of the book series Lecture Notes in Artificial Intelligence, which was published by Springer from 1996 through 2008.
- 6. I received a "recognition of service" award from the Association for Computing Machinery for my role as chair of the ACM's special interest group in Artificial Intelligence (SIGART) between 1983 and 1985. In 1986, I received the Sperry Fellowship for excellence in artificial intelligence research. In 1987, I received the Carnegie Mellon University Computer Science Department's teaching award.



- 7. I have also worked as a technical consultant on Computer Science applications for a variety of industrial clients. This includes consulting on data mining applications for Industrial Scientific Corporation (data mining to improve workplace safety); Carnegie Group Inc. (artificial intelligence and natural language processing); Citicorp (financial data mining, natural language); Wisdom Technologies (financial optimization); Dynamix Technologies (large-scale algorithms with applications to Homeland Security), and Meaningful Machines in natural language processing and machine translation. I have experience in many aspects of computing technology, including communications programming and protocols, where I regularly teach two classes every year, in databases, in telecommunications methods, in network-based systems, such as master-slave control devices, whether for displaying or capturing information, and in applications areas ranging from finance and advertisement models to display-based communications and customer-contact methods and algorithms.
- 8. I am a named inventor on a number of issued U.S. Patents, including: U.S. Patent No. 5,677,835 ("Integrated authoring and translation system"); U.S. Patent No. 5,995,920 ("Computer-based method and system for monolingual document development"); U.S. Patent No. 6,139,201 ("Integrated authoring and translation system"); U.S. Patent No. 6,163,785 ("Integrated authoring and translation system"); and U.S. Patent No. 7,406,443 ("Method and system for



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