UNITED STATES PATENT AND TRADEMARK OFFICE
_____

BEFORE THE PATENT TRIAL AND APPEAL BOARD
_____

Apple Inc.,
Petitioner,

v.

IMMERSION CORPORATION,
Patent Owner.

_____

Case IPR2016-01777
Patent No. 8,749,507

_____

**DECLARATION OF DANIEL WIGDOR, PH.D.
IN SUPPORT OF IMMERSION CORPORATION'S
PATENT OWNER PRELIMINARY RESPONSE**

I, Daniel Wigdor, declare as follows:

I. INTRODUCTION

1. My name is Daniel Wigdor. I have been engaged by Immersion Corporation ("Immersion") as an expert in connection with matters raised in the Petition for *Inter Partes* Review ("Petition") of U.S. Patent No. 8,749,507 (the "'507 patent") filed by Apple Inc. ("Petitioner").

2. This declaration is based on the information currently available to me. To the extent that additional information becomes available, I reserve the right to continue my investigation and study, which may include a review of documents and information that may be produced, as well as testimony from depositions that have not yet been taken.

II. QUALIFICATIONS AND EXPERIENCE

3. A detailed description of my professional qualifications, including a list of publications, awards, and professional activities, is contained in my curriculum vitae, a copy of which is attached as Exhibit 2002.

4. I am an Associate Professor of Computer Science at the University of Toronto, where I have appointments in the Department of Computer Science, the Department of Mathematical and Computational Sciences, as well as in the Department of Mechanical and Industrial Engineering. I am also the co-director of the Dynamic Graphics Project (DGP) at the University of Toronto. I have several

years of industry experience in user interface and Human-Computer Interaction (HCI) as a User Experience Architect at Microsoft. I was also a cofounder of Iota Wireless, a start-up dedicated to text-entry techniques for mobile phones, and of Tactual Labs, a startup focused on commercializing my research in mobile device input sensing and architectures. At the DGP, I work in the area of Human-Computer Interaction (HCI), specializing in the design and development of platforms for modern, post-WIMP ("windows, icons, menus, pointer") user interfaces. Researchers in this field focus on developing effective and efficient user interfaces without the use of traditional WIMP or Windows-based interface elements. These require the development of new computer software and hardware, with dual foci on both graphical and physical user interface technologies. My approach is to utilize interdisciplinary research methods to bring new insights in perceptual, cognitive, and motor abilities to the development of intuitive and useful technology artefacts, as well as to the development of user interface technology architectures and development methods. Over the last five years, one of my major projects has been the creation of immersive experiences simulating physical feelings of interactions with real world objects. This has included the development of methods for the detection of gestures input to sensors such as 3D cameras, traditional computer vision-based tools, and capacitive touch screens, and, in

response to those gestures, generating haptic effects, using technologies such as vibro-motors, pneumatic shape-changing objects, or robotics.

5.   In 2002, I received a Bachelor's degree (Hons) from the University of Toronto with a specialization in Human Computer Interaction, including a major-equivalent in computer science and a minor-equivalent in psychology and sociology.

6.   In 2004, I received a Master of Science degree in Computer Science from the University of Toronto. My work focused on mobile phone user interfaces, as well as other gesture-based systems.

7.   In 2008, I received a Ph.D. in Computer Science from the University of Toronto in 2008. My Ph.D. work was focused on the design and implementation of capacitive gesture-based interactive systems, especially large table-sized touchscreens, and their integration into large control centers. Among other things, this required the development of gesture recognition methodologies and software.

8.   In 2011-2012 I was an Associate of the School of Engineering and Applied Sciences at Harvard University, working as a member of the Scientists' Discovery Room (SDR) Lab at the School of Engineering and Applied Sciences (SEAS). At the SDR Lab at Harvard, I was responsible for supervising the research projects of post-doctoral fellows in collaboration with the lab director. I

have taught classes at the University of Washington and the University of Toronto, in both computer science and computer engineering departments. Topics include software design, algorithms, formal algorithm analysis, data structures, and human computer interaction, including the design of user interfaces for mobile phones and the design, prototyping, and construction of hardware devices.

9.   At Microsoft, I served over half a dozen different roles. As the architect of user experiences of Natural User Interfaces at Microsoft's Entertainment & Devices division, I was responsible for ensuring high-quality and exciting user experiences in platform and partner applications, such as Microsoft Surface. I also served as Microsoft's company-wide expert on Natural User Interfaces, which required that I give educational sessions for the company on the design of gesture-based systems. It also meant that I routinely consulted on the design of both software and hardware products focused on touch and gesture-based systems, such as Windows 8, Windows Phone 7, the Microsoft Kinect gesture-based gaming system, and many others. My work in Windows Phone included assisting with the development of haptic feedback mechanisms in the operating system.

10.   I hold Hon., B.Sc., M.S., and Ph.D. degrees in computer science, and have published extensively, with about 65 peer-reviewed technical publications. I have also contributed four textbook chapters on HCI, and co-authored "Brave NUI

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.