

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

MICROSOFT CORPORATION

Petitioner

v.

WINDY CITY INNOVATIONS LLC

Patent Owner

Patent No. 8,694,657

Issue Date: April 8, 2014

Title: COMMUNICATIONS SYSTEM

DECLARATION OF DR. CHANDRAJIT BAJAJ, PH.D.

Case No. IPR2016-01155

IPR2016-01155 – Ex. 2001

Windy City Innovations, LLC Patent Owner

I, Chandrajit Bajaj, Ph.D., hereby declare and state as follows:

A. Background and Qualifications

1. I am currently employed as a Professor of Computer Science at the University of Texas at Austin (“UT Austin”). I have a Bachelor of Technology degree in Electrical Engineering, which I obtained from the Indian Institute of Technology in Delhi in 1980. I also have a Master of Science degree and a Doctorate in Computer Science from Cornell University in 1983 and 1984, respectively. I currently hold the Computational Applied Mathematics endowed Chair in Visualization. I am also the Director of the Computational Visualization Center at UT Austin, which has been funded by the National Institutes of Health, the National Science Foundation, the Department of Energy, and the Department of Defense. The center personnel include fifteen researchers, scientists, post-graduate students, and staff.

2. Prior to my employment at UT Austin, I was an assistant professor, then associate professor, and finally professor of Computer Sciences at Purdue University from 1984 until 1997. During this time, I was also the Director of Image Analysis and Visualization Center at Purdue University. I was a visiting associate professor of Computer Science at Cornell University from 1990 to 1991.

3. I have spent the better part of my career, both at Purdue and UT Austin, researching, designing, teaching, and using high-performance computer

graphics systems to model, simulate, visualize and communicate real and synthesized objects and associated multimedia. I am knowledgeable about and have much experience in both the hardware and software, including distributed and parallel algorithms, used for capturing, displaying and communicating interactive imagery and video.

4. In the 1970s, while majoring in Electrical Engineering at Indian Institute of Technology with a minor in Computer Sciences, I was intimately involved in the design and fabrication of microprocessor-controlled circuits including the development of microprocessor controller software. In the 1980s, while at Cornell University, these past experiences led to research in computational geometry and optimization as well as the development of motion-planning software. In the early 1990s, I created a 3D distributed and collaborative multimedia platform, which allowed for the development of fully navigable and multi-person computer gaming and simulation applications. In 1993, I authored several technical papers while at the Computer Sciences Department of Purdue University entitled “Collaborative Multimedia Game Environments”, and “Collaborative Multimedia Design Environments.” The need for increasing computer graphics realism without sacrificing multi-user and remote interactivity led me also to invent real-time texture mapping from compressed representations, and goal directed data compression.

5. In the mid-2000s, I began to create spatially-realistic 3D graphical environments of nature's molecules and cells with a combination of acquired and reconstructed imagery within which a user may explore, query, and learn. Over the course of my career, I have participated in the design and use of several computer systems spanning handhelds, laptops, graphics workstations to PC/Linux clusters as well as very large memory supercomputers for capturing, modeling and displaying virtual and scientific phenomena. My experience with computer modeling and real-time display of computer graphics imagery encompasses many fields, such as interactive games, molecular, biomedical and industrial diagnostics, oil and gas exploration, geology, cosmology, and military industries. During this time at UT Austin, I also developed hardware and software technology that allowed multiple computers with multiple programmable graphics cards (GPUs) to simultaneously and synchronously display to large multi-screen immersive displays. We called this the UT Meta-Buffer solution. Much of my work involves issues relating to interactive computer multimedia, including interactive 3D video and real-time retrieval of texture image data for use in rendering applications in computer graphics. Examples of my publications, including peer-reviewed publications, are listed in my Curriculum Vitae ("CV").

6. My CV is submitted herewith as Appendix A. As set forth in my CV, I have authored approximately 150 peer-reviewed journal articles, 33 book

chapters (which were also peer reviewed), and 142 peer-reviewed conference publications.

7. I have written and edited four books, on topics ranging from graphics and visualization techniques to algebraic geometry and its applications. I have given 165 invited speaker keynote presentations. I am a Fellow of the American Association for the Advancement of Science, a Fellow of the Institute of Electrical and Electronics Engineers (IEEE), a Fellow of the Society of Industrial and Applied Mathematics (SIAM), and also a Fellow of the Association of Computing Machinery (also known as ACM), which is the world's largest education and scientific computing society. ACM Fellow is ACM's most prestigious member grade and recognizes the top 1% of ACM members for their outstanding accomplishments in computing and information technology and/or outstanding service to ACM and the larger computing community.

B. Materials Considered

8. For time spent in connection with this case, I am being compensated at my customary rate of \$575/hour. My compensation is not dependent upon the substance of the opinions I offer below, the outcome of this petition or any issues involved in or related to U.S. Patent 8,694,657 (the "657 Patent"). I have no financial interest in, or affiliation with, any of the real parties in interest or the patent owner.

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