

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Patent of: Backholm, et al.  
U.S. Patent No.: 10,027,619 Attorney Docket No.: 39521-0089IP1  
Issue Date: July 17, 2018  
Appl. Serial No.: 14/609,189  
Filing Date: Jan. 29, 2015  
Title: MESSAGING CENTRE FOR FORWARDING E-MAIL

**DECLARATION OF PATRICK TRAYNOR, Ph.D.**

I, Patrick Traynor, Ph.D., of Gainesville, FL, declare that:

**I. ASSIGNMENT**

1. I have been retained as a technical expert by counsel on behalf of Petitioner Apple Inc. (“Apple” or “Petitioner”). I understand that Apple is requesting that the Patent Trial and Appeal Board (“PTAB” or “Board”) institute an *inter partes* review (“IPR”) proceeding of U.S. Patent No. 10,027,619 (“the ’619 patent”) (APPLE-1001).

2. I have been asked to provide my independent analysis of the ’619 patent in light of the prior art publications cited below.

3. I am not, and never have been, an employee of Apple. I received no compensation for this declaration beyond my normal hourly compensation based on my time actually spent analyzing the ’619 patent, the prior art publications cited below, and the issues related thereto, and I will not receive any added

compensation based on the outcome of any IPR or other proceeding involving the '619 patent.

## II. QUALIFICATIONS

4. My qualifications for forming the conclusions set forth in this report are summarized here and explained in more detail in my curriculum vitae, which is attached as Appendix A, and which includes a list of publications I have authored over the course of my career.

5. I received a B.S. in Computer Science from the University of Richmond in 2002 and an M.S. and a Ph.D. in Computer Science and Engineering from the Pennsylvania State University in 2004 and 2008, respectively. My dissertation, entitled "Characterizing the Impact of Rigidity on the Security of Cellular Telecommunications Networks," focused on security problems that arise in cellular infrastructure when gateways to the Internet are created.

6. I am currently a Professor in the Department of Computer and Information Science and Engineering (CISE) at the University of Florida. I was hired under the "Rise to Preeminence" Hiring campaign and serve as the Associate Chair for Research for my Department, and am the John and Mary Lou Dasburg Preeminent Chair in Engineering. Prior to joining the University of Florida, I was an Associate Professor from March to August 2014 and an Assistant Professor of Computer Science from 2008 to March 2014 at the Georgia Institute of

Technology. I have supervised many Ph.D., M.S. and undergraduate students during the course of my career.

7. I am a Senior Member of the Association for Computing Machinery (ACM) and the Institute of Electrical and Electronics Engineers (IEEE). I am also a member of the USENIX Advanced Computing Systems Association.

8. My area of expertise is security, especially as it applies to mobile systems and networks, including cellular networks. As such, I regularly teach students taking my courses and participating in my research group to program and evaluate software and architectures for mobile and cellular systems.

9. I have published over 70 articles in the top journals and conferences in the areas of information security, mobility and networking. Many of my results are highly cited, and I have received a number of “Best Paper” Awards. I have also written a book entitled *Security for Telecommunications Networks*, which is used in wireless and cellular security courses at a number of top universities.

10. I serve as an Associate Editor for the ACM Transactions on Privacy and Security (TOPS), have been the Program Chair for seven conferences and workshops, and have served as a member of the Program Committee for over 50 different conferences and workshops.

11. I have received numerous awards for research and teaching, including being named a Kavli Fellow (2017), a Fellow of the Center for Financial Inclusion

(2016) and a Research Fellow of the Alfred P. Sloan Foundation (2014), won the Lockheed Inspirational Young Faculty Award (2012), was awarded a National Science Foundation (NSF) CAREER Award (2010), and the Center for the Enhancement of Teaching and Learning at Georgia Tech's "Thanks for Being a Great Teacher" Award (2009, 2012, 2013).

12. I was a co-Founder and Research Fellow for the private start-up, Pindrop Security, from spring 2012 to spring 2014. Pindrop provides anti-fraud and authentication solutions for Caller-ID spoofing attacks in enterprise call centers by creating and matching acoustic fingerprints.

13. I was a co-Founder and Chief Executive of a private start-up, CryptoDrop. CryptoDrop developed a ransomware detection and recovery tool to provide state of the art protection to home, small business and enterprise users.

14. I am a co-Founder and Chief Executive of a private start-up, Skim Reaper. Skim Reaper developed tools to detect credit card skimming devices, and currently works with a range of banks, law enforcement, regulators, and retailers.

15. I have taught courses on the topics of network and systems security, cellular networks, and mobile systems at both Georgia Tech and the University of Florida. I also advised and instructed the Information Assurance Officer Training Program for the United States Army Signal Corps in the spring of 2010.

16. I am a named inventor on two United States patents, which are listed in my CV. These patents detail methods for determining the origin and path taken by phone calls as they traverse networks and for providing a secure means of indoor localization.

17. Further detail on my education, work, and teaching experience, and the cases in which I have previously given testimony in at least the past four years are contained in my curriculum vitae (CV) included as Appendix A.

18. Based on my experience and education, I believe that I am qualified to opine as to the knowledge and level of skill of one of ordinary skill in the art at the time of the alleged invention of the '619 patent (which I further describe below) and what such a person would have understood at that time, and the state of the art during that time. Based on my above-described experience in wireless communications technology, and the acceptance of my publications and professional recognition by societies in my field, I believe that I am qualified to be an expert in wireless communications.

### **III. LEGAL PRINCIPLES**

19. In forming my analysis and conclusions expressed in this declaration, I have applied the legal principles described in the following paragraphs, which were provided to me by counsel for the Petitioner.

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