## UNITED STATES PATENT AND TRADEMARK OFFICE

### BEFORE THE PATENT TRIAL AND APPEAL BOARD

WIZ, INC., Petitioner,

v.

ORCA SECURITY LTD, Patent Owner.

Case IPR2024-00220 Patent No. 11,431,735

**DECLARATION OF DR. ANGELOS STAVROU** 

DOCKET A L A R M Find authenticated court documents without watermarks at <u>docketalarm.com</u>.

## **TABLE OF CONTENTS**

I.	ENGAGEMENT1						
II.	QUALIFICATIONS						
III.	COMPENSATION						
IV.	INFORMATION CONSIDERED						
V.	LEGAL PRINCIPLES						
VI.	THE RELEVANT TIMEFRAME FOR ANALYSIS7						
VII.	PERSON OF ORDINARY SKILL IN THE ART						
VIII.	. STATE OF THE ART						
	A.	Virtualization9					
	B.	Snapshots					
	C.	Cloud Computing24					
	D.	Cyber Security					
		1. Types of Threats and Vulnerabilities27					
		2. Detecting Threats and Vulnerabilities					
		3. Responding to Threats and Vulnerabilities					
IX.	OVERVIEW OF THE '735 PATENT						
	A. Challenged Claims						
	B.	B. Prosecution History of the '735 Patent					
Х.	CLAIM CONSTRUCTION						
	A.	A. Determining/Determine a "Location" of a Snapshot53					
	B.	"Analyzing the Snapshot"					
	i						

XI.	I. OVERVIEW OF THE PRIOR ART						
	A.	Veselov (U.S. Patent No. 11,216,563, EX1007)					
	B.	avapatna (U.S. Pub. No. 2013/0191919, EX1008)	60				
XII.	. GROUND 1: CLAIMS 1-7, 9-17, AND 19 WERE OBVIOUS OVER VESELOV AND BASAVAPATNA						
	A. Independent Claims						
		1.	Independent Claim 1	63			
		2.	Independent Claim 10	101			
		3.	Independent Claim 11	104			
		4.	Reasons Why a Person of Ordinary Skill in the Art Would Have Combined Veselov and Basavapatna	109			
	B.	Dependent Claims					
		1.	Dependent Claims 2 and 12	115			
		2.	Dependent Claims 3 and 13	122			
		3.	Dependent Claims 4 and 14	124			
		4.	Dependent Claims 5 and 15	134			
		5.	Dependent Claims 6 and 16	145			
		6.	Dependent Claims 7 and 17	152			
		7.	Dependent Claims 9 and 19	157			
XIII. CONCLUDING STATEMENTS							
XIV. APPENDIX A – MATERIALS CITED161							

I, Angelos Stavrou, declare as follows:

#### I. ENGAGEMENT

1. I have been retained by counsel for Wiz, Inc. as an expert witness in the above-captioned proceeding. I have been asked to provide my opinion about the state of the art of the technology described in U.S. Patent No. 11,431,735 (the "735 patent") and on the patentability of claims 1-7, 9-17, and 19 of this patent. The following is my written testimony on these topics.

#### **II. QUALIFICATIONS**

2. I received my M.Sc. in Electrical Engineering, M.Phil., and Ph.D. (with distinction) in Computer Science all from Columbia University. I also hold an M.Sc. in theoretical Computer Science from the University of Athens and a B.Sc. in Physics with distinction from the University of Patras, Greece.

3. I am a Virginia Tech Innovation Campus founding Professor, and the Entrepreneurship activities lead. I am also a member of the Bradley Department of Electrical & Computer Engineering at Virginia Tech. From 2017 to 2020, I was a Professor in the Computer Science Department at George Mason University ("GMU"), teaching courses including Operating Systems Security and Cyber Security Laboratory. From 2012 to 2017, I was an Associate Professor in GMU's Computer Science Department, teaching courses including Operating Systems Security, Enterprise Security Practices, and Enterprise Security Technology. From 2014 to 2017, I was an Academic Director in GMU's School of Management for the M.S. in Management of Secure Information Systems Program. From 2013 to 2015, I was an Academic Director in GMU's Computer Science Department for the M.S. in Information Security and Assurance Program. From 2011 to 2020, I was an Associate Researcher in the Computer Security Division at the National Institute of Standards and Technology ("NIST"). I am a co-author of numerous publications involving virtualization and cyber security, among other topics. EX1003, 3-19.

4. I am also the founder of Quokka, Kryptowire Labs, Aether Argus, and Impedyme Inc. I have served as a principal investigator on research awards from NSF, DARPA, IARPA, DHS, AFOSR, ARO, ARL, and ONR. I have written more than 140 peer-reviewed conference and journal articles. Furthermore, I am an inventor of nineteen issued patents and several pending patent applications. I am an Associate Editor of IEEE Transactions on Computers, IEEE Security & Privacy, and IEEE Internet Computing magazine and a co-chair of the IEEE Blockchain initiative. I am a senior member of the ACM, USENIX, and IEEE. My current research interests include security and reliability for distributed systems, security principles for virtualization, and anonymity, focusing on building and deploying large-scale systems.

## DOCKET A L A R M



# 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.