Professor Zhi Ding

Ph.D. and Fellow of IEEE

Expertise

DOCKE.

- Wireless Communication Systems
- Cellular Wireless
- Communication networks
- Signal Processing and Analysis
- Digital Transmissions
- DSL and Cable Internet Service
- Digital Signal Processing
- WiFi, LTE, DOCSIS, Bluetooth

Professional Summary

- Professor of major US universities for over 28 years.
- Consulted for major engineering companies such as Nortel, Analog Devices, Intel, and NEC
- Worked as expert on multiple patent infringement cases.
- Conducted research works on Communications and Signal Processing for over 30 years.
- Supervised over 25 PhD students.
- Author of more than 170 journal papers and 2 books on communication technologies.

Dr. Zhi Ding has been a professor of electrical engineering at major US universities for 27 years. Since 1995, he has consulted for both engineering companies such as Nortel, Analog Devices, Intel, and worked as expert for major law firms such as Kirkland & Ellis, WilmerHale, Quinn Emanuel, Fish & Richardson, Sheppard Mullin, Sidley Austin, Mayer Brown, Venable, and Finnegan, on multiple technical and patent infringement cases. He has been conducting research works on wireless communications and signal processing since 1984. He has supervised over 25 PhD students. He is an author of 170 journal papers and 2 technical books on communication technologies. He has taught classes that cover the fundamentals of signal detection, communications, and systems.

Dr. Ding was appointed as the Child Family Professor of Engineering and Entrepreneurship in 2009-2014. He served as the steering committee chair of the IEEE Transactions on Wireless Communications. He was elevated to Fellow of IEEE in 2002 by the IEEE Signal Processing Society. He also served as the Technical Program Chair of the IEEE Globecom 2006 (the flagship conference of the IEEE Communications Society), Dr. Ding is an eminent scholar and expert of wireless technologies AND signal processing.

Consulting History (Partial List):

Past Client	Past Services
Kirkland & Ellis LLP	Expert consultant on various wireless (cellular and WiFi) and communications technologies since 2007. Major
	engagements include
	2007-10: E. D. Texas, C.A. No. 2:07-CV-474
	2008-10: E. D. Texas, C.A. No. 2:07-CV-474 2008-10: E. D. Texas, C.A. No. 2:08-CV-247
	2008: Apple License Consulting (M. Pieja)
	2009: Apple Patent Analysis (B. Kwok)
	2009: Cisco v. MOSAID matter (E. Lamison)
	2009-10: D. Del. C.A. No. 07-CV-752
	2008-10: D. Del. C.A. No. 07-md1848
	2009-10: E.D. Texas, C.A. No. 5:09-cv-00101
	2010-13: Netgear, Inc. & Ruckus Wireless Inc. Patent
	Matter, Netgear, Inc. & Ericsson Inc. Patent Matter. (E.
	Lamison)
	2011-13: E. D. Texas, C.A. No. 6:10-cv-00473-LED
	2011-13: N. D. Illinois, No. 1:11-cv-09308
	2011-13: D. Del. Case No. 1:11-cv-00425
	2013: Alcatel-Lucent Patent matters (B. Nguyen)
Wilmer Cutler	Expert consultant on cellular wireless and communications
Pickering Hale, and	technologies since 2010. Major engagements include
Dorr, LLP	2009-11: D. Del. C.A. No. 09-791-GMS
	2009-11: D. Del. C.A. No. 09-1002 and ITC Docket 2702
	2012: N.D. Cal. Apple Inc. v. Samsung Elecs. Co., No. 12-
	cv-630.
	2011-13: Apple Inc. v. Samsung Electronics Co. (US,
	Japan, Korea, Germany, the Netherlands, UK, Italy, and
	others) including N. D. Cal, Case No. 11-cv-01846, ITC
	Docket Nos. 2824, 2827.
E'sh and D'shandara	
Fish and Richardson,	Expert witness on cellular wireless and communications
LLP	technologies for Marvell, Inc. Major engagements include
	 2014-15: <i>Inter Partes</i> Review of U.S. Patent 5,712,870 2014: <i>Inter Partes</i> Review of U.S. Patent 6,977,944
	2014. Inter Furies Review of U.S. Fatelit 0,977,944
Kaye Scholer LLP	US District Court of Delaware
Ruje Senoter EEr	2009-10: D. Del. C.A. No. 07-CV-752
	2008-10: D. Del. C.A. No. 07-md1848
	Representing defendant as expert technical consultant
	against infringement accusations involving data over cable
	services. Case dropped by the plaintiff after expert reports
	2008-2009. Attorney's fees recovered.
	2012: C.D. Cal., CV 11-09373 RGK (RZx)
	2012: D. Del., C.A. No. <u>10-1062-GMS</u>

Bridges and Mavrakakis, LLP	IP Evaluation matters regarding client multi-billion dollar Patent portfolio purchase and other matters since 2011.
Sterne, Kessler, Goldstein & Fox PLLC	Technical consultant and expert declarant in Inter Partes Review Proceedings US Patents 7,477,624, 7,903,608, 8,542,643.
Bramson, Plutzik, Mahler &Birkhaeuser	2013: Expert witness for Plaintiff for a putative class action.
Gibson, Dunn & Crutcher, LLP	2014: Expert Consultant, for AT&T Mobility LLC and Cricket Communications, Inc., D. Del. Civil Action Nos. 13-1668 (LPS) 13-1669 (LPS)
Quinn Emanuel	2014: Expert technical consultant in Civil Action No. 1:13- cv-473 (D. Del.) (SLR)
Norton Rose Fulbright US LLP	2015-17: Technical consultant and expert witness in 1:14-
	cv-00436 (D. C. West Texas) and IPR2015-10577, IPR2015-10580, IPR-201510581.
Sheppard, Mullin,	
Richter, and Hampton, LLP	2015-17: Technical consultant and testifying witness in Case No. 8:14-cv-341 (C. D. CA).
Rothwell, Figg,	
Ernest, and Manbeck, P.C.	2016: Technical consultant and expert witness in 15-cv-01746-H-RBB (S. D. CA).
Mayer Brown LLP	
Sidley Austin, LLP	2016-17: Technical consultant and expert testifying witness in Arbitration on SEP and licensing disputes.
Irell & Manella, LLP	2016-17: Technical consultant and expert testifying witness on SEP and licensing disputes.
Venable, LLP	2016-17: Technical consultant and testifying witness regarding US Patent disputes.
Pillsbury LLP	
	2017-18: Expert witness for Verizon Services Corp. in Case No. 2:16-CV-588-WCB (E. D. TX) on US Patent disputes.
	2017-18: Expert and testifying witness in Case in Case Case No. 5:16-cv-00179-RWS (E. D. TX) on patent dispute.

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Expert Witness/Deposition (4 Trials and 8 Depositions)

Past Client Bramson, Plutzik, Mahler & Birkhaeuser LLP	Past Services 2013: Deposition on Case No. CV 12-05240 PJH Nad Karim v. Hewlett Packard, Co. UNITED STATES NORTHERN DISTRICT COURT OF CALIFORNIA. Settlement ordered Jan. 18, 2017.
Fish and Richardson (Representing Marvell)	2015 (Feb. & August): 2 Depositions for Marvell. US PTAB <i>Inter Partes</i> Review IPR2014-00548 Marvell Semiconductor, Inc. v. Intellectual Ventures I LLC
Norton, Rose, Fulbright, US, LLP	2016 (April): Deposition for US PTAB <i>Inter Partes</i> Review IPR2015-10577, IPR2015- 10580, IPR2015-10581, IPR2015-10581. Qualcomm Inc. v Bandspeed Inc.
Sheppard, Mullin, Richter, and Hampton, LLP Sidley Austin, LLP	 2016 (May): Deposition for TCL in <i>TCL Communication Technology Holdings, LTD., et al. v.</i> <i>Ericsson, et al.</i>, Case No. 8:14-cv-341 (C. D. CA). 2017 (Feb): Testified during court proceeding for TCL. 2016 (December): Testified for Huawei in Huawei Technologies, Co. Ltd v. Samsung Regarding FRAND licensing disputes in Shenzhen Court, P.R. China.
Mayer Brown LLP Venable LLP	 2018 (June): Deposition. 2017 (January): Testified during tribunal proceeding for LG Electronics, Inc. in standard essential patent (SEP) licensing dispute of Nokia Technologies, Ltd. v. LG Electronics, Inc. During arbitration hearing in Paris, France.
Pillsbury LLP	2017 (October): Deposition as expert witness for Verizon Services Corp. in Case No. 2:16-CV-588-WCB (E. D. TX) on US Patent disputes.
Recent IPR Outcomes	2018 (Feb): Deposition (Case No. 5:16-cv-00179-RWS) 2018 (June): Testifying at E. D. Texas (Texarkana) jury trial 6 (Case No. 5:16-cv-00179-RWS).

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DOCKET A L A R M <u>IPR2015-00314</u> Expert Declaration to the Patent Trial and Appeal Board with link to <u>Final PTAB Decision</u>

<u>IPR2015-00315</u> Expert Declaration and <u>Supplemental Expert</u> <u>Declaration</u> to the Patent Trial and Appeal Board with link to <u>PTAB Trial Decision</u>.

<u>IPR2015-00531 Expert Declaration</u> to the Patent Trial and Appeal Board with link to <u>PTAB Trial Decision</u>.

<u>IPR2015-01580 Expert Declaration</u> to the Patent Trial and Appeal Board with link to <u>PTAB Trial Decision</u>.

<u>IPR2015-01582</u> Expert Declaration to the Patent Trial and Appeal Board and link to <u>PTAB Decision on Institution of IPR</u> and Grant of Motion for Joinder with ITR2015-00531.

<u>IPR2016-00620 Expert Declaration</u> to the Patent Trial and Appeal Board with link to <u>PTAB decision to institute</u> and link to <u>Final PTAB decision finding all but 2 dependent</u> <u>claims invalid</u>.

<u>IPR2016-00623 Expert Declaration</u> to the Patent Trial and Appeal Board with link to <u>PTAB decision</u>.

Employment History

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From: To:	2000 Present Position:	University of California at Davis Davis, CA <i>Professor, Department of Electrical and Computer Engineering</i>
From: To:	01/1999 09/2000 Position:	University of Iowa Iowa City, IA Assoc. Professor, Department of Electrical and Computer Engineering
From: To:	01/1997 12/1997 Position:	Hong Kong University of Science and Technology Hong Kong Visiting Associate Professor, Department of Electrical and Electronic Engineering
From: To:	09/1995 12/1998 Position:	Auburn University Auburn, AL 09/1995-12/1998: Associate Professor, Department of Electrical and

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