Professor Zhi Ding

Ph.D. and Fellow of IEEE

Expertise

- 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. 2:08-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 Pickering Hale, and Dorr, LLP Expert consultant on cellular wireless and communications technologies since 2010. Major engagements include

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.

Fish and Richardson, LLP

Expert witness on cellular wireless and communications technologies for Marvell, Inc. Major engagements include 2014-15: *Inter Partes* Review of U.S. Patent 5,712,870 2014: *Inter Partes* Review of U.S. Patent 6,977,944

Kaye Scholer LLP

US District Court of Delaware

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. 10-1062-GMS



Bridges and IP Evaluation matters regarding client multi-billion dollar Mavrakakis, LLP Patent portfolio purchase and other matters since 2011. Sterne, Kessler, Technical consultant and expert declarant in Inter Partes Review Proceedings US Patents 7,477,624, 7,903,608, Goldstein & Fox PLLC 8,542,643. Bramson, Plutzik, 2013: Expert witness for Plaintiff for a putative class action. Mahler &Birkhaeuser Gibson, Dunn & 2014: Expert Consultant, for AT&T Mobility LLC and Cricket Communications, Inc., D. Del. Civil Action Nos. Crutcher, LLP 13-1668 (LPS) 13-1669 (LPS) Quinn Emanuel 2014: Expert technical consultant in Civil Action No. 1:13cv-473 (D. Del.) (SLR) Norton Rose Fulbright US LLP 2015-17: Technical consultant and expert witness in 1:14cv-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 2016-17: Technical consultant and expert testifying witness in Arbitration on SEP and licensing disputes. Sidley Austin, LLP 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.

Expert Witness/Deposition (4 Trials and 8 Depositions)

Past Client Past Services

Bramson, Plutzik, 2013: Deposition on Case No. CV 12-05240 PJH

Mahler & Nad Karim v. Hewlett Packard, Co.

Birkhaeuser LLP 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 *Inter Partes* Review IPR2014-00548

Marvell Semiconductor, Inc. v. Intellectual Ventures I LLC

Norton, Rose, 2016 (April): Deposition for

Fulbright, US, LLP US PTAB Inter Partes Review IPR2015-10577, IPR2015-

10580, IPR2015-10581, IPR2015-10581.

Qualcomm Inc. v Bandspeed Inc.

Sheppard, Mullin,

Richter, and Hampton, LLP 2016 (May): Deposition for TCL in

TCL Communication Technology Holdings, LTD., et al. v.

Ericsson, et al., Case No. 8:14-cv-341 (C. D. CA).

2017 (Feb): Testified during court proceeding for TCL.

Sidley Austin, LLP

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 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.

Venable LLP During arbitration hearing in Paris, France.

2017 (October): Deposition as expert witness for Verizon

Services Corp. in Case No. 2:16-CV-588-WCB (E. D. TX) on

Pillsbury LLP US Patent disputes.

2018 (Feb): Deposition (Case No. 5:16-cv-00179-RWS)

2018 (June): Testifying at E. D. Texas (Texarkana) jury trial

Recent IPR Outcomes (Case No. 5:16-cv-00179-RWS).



IPR2015-00314 Expert Declaration to the Patent Trial and Appeal Board with link to Final PTAB Decision

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

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

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

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

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

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

Employment History

From: 2000 **University of California at Davis**

To: Present Davis, CA

Position: Professor, Department of Electrical and Computer Engineering

From: 01/1999 University of Iowa To:

09/2000 Iowa City, IA

Position: Assoc. Professor, Department of Electrical and Computer Engineering

From: 01/1997 Hong Kong University of Science and Technology

To: 12/1997 Hong Kong

> Visiting Associate Professor, Department of Electrical and Electronic Position:

> > Engineering

From: 09/1995 **Auburn University**

To: 12/1998 Auburn, AL

Position: 09/1995-12/1998: Associate Professor, Department of Electrical and



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