## Jeffrey J. Rodriguez, Ph.D.

5658 Caminito Genio La Jolla, CA 92037 520-360-1860 (C) jrod2718@gmail.com



## **Overview**

Prof. Rodriguez has extensive experience in the field of electrical and computer engineering. His areas of expertise include signal/image/video processing and analysis, biomedical data analysis, communication systems, microprocessor systems, electric circuits, and related software development. At the University of Arizona, he is a faculty member in the Dept. of Electrical and Computer Engineering and Director of the Signal and Image Laboratory (SaIL).

He served as Co-Director of Connection One, a National Science Foundation multi-university research center on communication circuits and systems. In addition to more than 150 publications in the field, he has been very active in professional activities as a Senior Member of the Institute of Electrical and Electronics Engineers (IEEE) and the IEEE Signal Processing Society.

Prof. Rodriguez served as General Chair of the 2016 IEEE Southwest Symp. on Image Analysis and Interpretation (SSIAI). In addition, during 2005–2011 he served on the IEEE Signal Processing Society Technical Committee on Image, Video, and Multidimensional Signal Processing. He served as General Chair of the 2007 IEEE Intl. Conf. on Image Processing (ICIP), as well as General Chair of SSIAI 2014, General Chair of SSIAI 2003, General Chair of SSIAI 1998, and Vice Chair of SSIAI 2004, as well as positions on numerous other professional committees. From 1996 to 2000, Prof. Rodriguez was Associate Editor of the journal, *IEEE Transactions on Image Processing*.

## **Expertise**

Image processing & analysis (filtering, enhancement, segmentation, pattern recognition, restoration, super-resolution, JPEG, watermarking, inpainting, etc.)

Video processing & analysis (filtering, enhancement, segmentation, pattern recognition, motion estimation, tracking, MPEG, watermarking, etc.)

Signal processing & analysis (speech, audio, filtering, Fourier analysis, etc.)

Biomedical data analysis

Computational photography (deblurring, enhancement, high dynamic range imaging, super-resolution, etc.)

Communication systems (signal conditioning, data compression, image & video communication, etc.)

Microprocessor systems (interfacing, programming, etc.)

Electric circuits (analog and digital)

Software analysis (C, C++, MATLAB, etc.)

### Education

Ph.D., The University of Texas at Austin, Electrical Engineering, May 1990

S.M., Massachusetts Institute of Technology, Electrical Engineering, June 1986

B.S., The University of Texas at Austin, Electrical Engineering, May 1984

June 16, 2021



## **Employment**

- 1990–present: The University of Arizona
  - 1997-present, Associate Professor of Electrical and Computer Engineering, with tenure
  - o 2017–present, Associate Professor of Biomedical Engineering, with tenure
  - o 2000–2003, 2005–2016: Director of ECE Graduate Studies
  - 2002–2017: Faculty member in the Biomedical Engineering Graduate Interdisciplinary Program
  - o 2009–2014, Director of Image Analysis, Cancer Imaging Shared Services, Arizona Cancer Center
  - 2003–2008: Co-Director of Connection One, a National Science Foundation industry/university cooperative research center for communication circuits and systems
  - o 1990–1997: Assistant Professor of Electrical and Computer Engineering
- 1986–1990: The University of Texas at Austin, Graduate Research Assistant in Dept. of Electrical Engineering
- 1985: Massachusetts Institute of Technology, Graduate Research Assistant in Dept. of Electrical Engineering
- 1982–1985 (summers): IBM Corp. (Austin, Texas) hardware design and system programming
- 1980–1981 (summers): Texas Instruments, Inc. (Austin, Texas) software quality assurance

## Consulting

Deposed 15 times. Testified in court 5 times.

Confidential U.S. Dist. Ct. Matter

Dates: Dec. 2020 -

In the Matter of Certain Video Processing Devices, Components Thereof, and Digital Smart Televisions

Containing the Same, Inv. No. 337-TA-1222 Court: U.S. International Trade Commission

Dates: Nov. 2020 -

Client: LG Electronics Inc. and LG Electronics U.S.A., Inc. (resp.)

Complainant: DivX, LLC

Counsel: Finnegan, Henderson, Farabow, Garrett & Dunner, L.L.P.

Technology: Video streaming

Deposed May 2021

Intellectual Tech LLC v. Zebra Technologies Corporation, Case No. 6:19-cv-00628-ADA

Court: U.S. District Court for the Western District of Texas, Waco Division

Dates: Oct. 2020 -

Client: Intellectual Tech LLC (pl.) Counsel: Cole Schotz, P.C.

Technology: RFID controller system

Deposed Dec. 2020



In the Matter of Certain Electronic Devices, Including Computers, Tablet Computers, and Components

and Modules Thereof, Inv. No. 337-TA-1208 Court: U.S. International Trade Commission

Dates: Sept. 2020 - March 2021

Client: Nokia Technologies Oy and Nokia Corporation (compl.) Respondents: Lenovo, Inc. and other Lenovo companies

Counsel: McKool Smith Technology: Video coding Deposed March 10, 2021

Inter Partes Review of Patent No. 7,064,768, Case IPR2021-00434

Court: U.S. Patent and Trademark Office, Patent Trial and Appeal Board

Dates: Nov. 2020 - Jan. 2021

Client: Samsung Electronics Co., Ltd. (pet.)
Patent Owner: Pictos Technologies Inc.

Counsel: Paul Hastings LLP

Technology: Image processing; image filtering

Inter Partes Review of Patent No. 7,199,821

Court: U.S. Patent and Trademark Office, Patent Trial and Appeal Board

Dates: Oct. 2020 – Jan. 2021 Client: Apple Inc. (pet.) Patent Owner: Maxell, Ltd.

Counsel: Erise IP

Technology: Image processing for electronic camera; white balance

Inter Partes Review of Patent No. 6,349,154, Case IPR2020-00479

Court: U.S. Patent and Trademark Office, Patent Trial and Appeal Board

Dates: June 2019 – Jan. 2021 Client: Google LLC (pet.) Patent Owner: Uniloc 2017 LLC Counsel: Paul Hastings LLP

Technology: Image and video data compression systems

Ex Parte Reexamination of Patent No. 8,339,493

Court: U.S. Patent and Trademark Office

Dates: Nov. 2020 – Dec. 2020 Client: Apple Inc. (pet.) Patent Owner: Maxell, Ltd.

Counsel: Erise IP

Technology: Image processing for electronic camera; image resolution

Inter Partes Review of Patent No. 7,012,960, Case IPR2020-00757

Court: U.S. Patent and Trademark Office, Patent Trial and Appeal Board

Dates: June 2019 – Aug. 2020 Client: Google LLC (pet.) Patent Owner: Uniloc 2017 LLC Counsel: Paul Hastings LLP

Technology: Image and video data compression systems



Inter Partes Review of Patent No. 9,769,477, Case IPR2019-01035

Court: U.S. Patent and Trademark Office, Patent Trial and Appeal Board

Dates: April 2019 – Aug. 2020 Client: Google LLC (pet.)

Patent Owner: Realtime Adaptive Streaming LLC

Counsel: Paul Hastings LLP

Technology: Image and video data compression systems

Deposed Feb. 2020

Inter Partes Review of Patent No. RE46,777, Case IPR2019-01037

Court: U.S. Patent and Trademark Office, Patent Trial and Appeal Board

Dates: April 2019 – Aug. 2020 Client: Google LLC (pet.)

Patent Owner: Realtime Adaptive Streaming LLC

Counsel: Paul Hastings LLP

Technology: Image and video data compression systems

Inter Partes Review of Patent No. 7,386,046, Case IPR2019-01033

Court: U.S. Patent and Trademark Office, Patent Trial and Appeal Board

Dates: April 2019 – Aug. 2020 Client: Google LLC (pet.)

Patent Owner: Realtime Adaptive Streaming LLC

Counsel: Paul Hastings LLP

Technology: Image and video data compression systems

Inter Partes Review of Patent No. 8,339,493, Case IPR2020-00597

Court: U.S. Patent and Trademark Office, Patent Trial and Appeal Board

Dates: Feb. 2020 – July 2020 Client: Apple Inc. (pet.) Patent Owner: Maxell, Ltd.

Counsel: Erise IP

Technology: Image processing for electronic camera; resolution

Inter Partes Review of Patent No. 6,329,934, Case IPR2020-00448

Court: U.S. Patent and Trademark Office, Patent Trial and Appeal Board

Dates: June 2019 – July 2020 Client: Google LLC (pet.) Patent Owner: Uniloc 2017 LLC Counsel: Paul Hastings LLP

Technology: Image and video data compression systems

Inter Partes Review of Patent No. 6,329,934, Case IPR2020-00447

Court: U.S. Patent and Trademark Office, Patent Trial and Appeal Board

Dates: June 2019 – March 2020 Client: Google LLC (pet.) Patent Owner: Uniloc 2017 LLC Counsel: Paul Hastings LLP

Technology: Image and video data compression systems



In the Matter of Certain Infotainment Systems, Components Thereof, and Automobiles Containing the

Same, Inv. No. 337-TA-1119

Court: U.S. International Trade Commission

Dates: Oct. 2018 – June 2019 Client: Broadcom, Limited (compl.)

Respondents: Toyota Motor Corporation, Panasonic Corporation, Denso Ten Limited, Renesas

Electronics Corporation, Japan Radio Co., Ltd., et al.

Counsel: Steptoe & Johnson LLP

Technology: Graphics/image/video processing for automobile infotainment systems

Deposed April 5, 2019

Testified and cross-examined at trial, June 4 & 7, 2019

Inter Partes Review of Patent No. 8,508,751

Court: U.S. Patent and Trademark Office, Patent Trial and Appeal Board

Dates: April 2018 - May 2019

Client: Pathway Innovations and Technologies, Inc. (patent owner)

Petitioners: AVer Information Inc. and iPEVO, Inc.

San Diego IP Law Group LLP

Technology: Document cameras and video processing

Deposed Sept. 20, 2018

Confidential IPR Matter

Dates: July 2018 - Sept. 2018

Confidential ITC Matter

Dates: May 2018 - June 2018

In the Matter of Certain Digital Cable and Satellite Products, Set-Top Boxes, Gateways, and Components

Thereof, Inv. No. 337-TA-1049

Court: U.S. International Trade Commission

Dates: July 2017 - Nov. 2017

Client: ARRIS International plc; ARRIS Group, Inc.; ARRIS Technology, Inc.; ARRIS Enterprises LLC; ARRIS Solutions, Inc.; ARRIS Global Ltd. (formerly Pace Ltd.); Pace Americas, LLC; Pace Americas

Holdings, Inc.; Pace USA LLC; and Pace Americas Investments, LLC (resp.)

Complainant: Sony Corporation and Sony Electronics Inc.

Counsel: Fish and Richardson P.C.

Technology: Video receiver and video processing

Inter Partes Review of Patent No. 7,720,294

Court: U.S. Patent and Trademark Office, Patent Trial and Appeal Board

Dates: June 2017 - Sept. 2017

Client: Broadcom Corp. (patent owner)
Petitioner: Advanced Micro Devices, Inc.
Counsel: Swanson & Bratschun, LLC

Technology: Video decoding



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