

Wayne E. Prentice

Prentice Imaging Consulting Services, LLC

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PROFESSIONAL PROFILE

Image Scientist with 25+ years experience in **R&D** and **product commercialization** of digital cameras. Specializing in digital image capture technologies: Modeling and simulation, image quality assessment, ISP tuning, image path optimization, custom algorithm design. Experience in space based, professional, consumer, industrial, automotive, mobile phone imaging and computer vision applications. Expert in system level design, problem diagnosis and application specific optimization.

- **Image Science** –Delivered imaging solutions to clients with a diverse range of applications. Kodak technical lead image scientist for image/video/audio quality testing, digital camera development, image path optimization and new feature ideation. Primary inventor for the marquee Kodak Smart Capture feature. Experienced with implementation and design of **AE/AF/AWB algorithms**. Created a novel image editing path design and implementation for Kodak EasyShare Software based upon photographic principles. Developed CMOS sensor models to simulate both small (mobile) and large (35mm Full Frame) imagers which model the photographic chain from scene radiometry, optics, sensor physics, sampling, image processing and rendering. Developed custom image path solutions to address imager issues and specific data path requirements. Supported HDR CMOS sensor based systems.

- **Innovation** – Creative problem solver with an emphasis on creating team synergy to deploy world class imaging systems. Inventor with **sixteen US Patents granted** in various areas including camera systems, marquee Kodak digital camera Smart Capture feature, CMOS sensor design, image processing and user interfaces.

- **Software Engineering** – 20+ years experience in **C/C++, STL, Windows SDK/MFC** and **embedded development**. Experienced in large multi-developer projects with configuration control, unit testing and bug tracking. Authored software design documents. Used both waterfall and **agile development** strategies. 10+ years' experience in Python, Matlab and ImageJ Macro language.

- **Communications** – **Image science digital camera technology instructor** for Kodak image scientists. Kodak representative for PhotoPlus Expo, promoting Kodak digital cameras and EasyShare software and printers. Interviewed by Walt Mossberg (Personal Technology) of the Wall Street Journal on EasyShare Software image processing. Presenter at the Demo '97 convention, **"Demo God" award recipient**. Guest speaker at Malta sales kick-off (2010). "Compassionate Tech Guy" actor in internal corporate vision video (2010).

- **Intellectual Property: 30(b)(6) witness and fact witness** for Kodak Image Science Technology. Expert witness (2x), patent prosecution and patent analysis. Authored expert reports. Deposed 4x.

EXPERIENCE

Prentice Imaging Consulting Services: 7/2018-Present

Owner. Deploying Imaging Solutions for multiple clients: Imaging system level design, optimization, implementation, characterization and troubleshooting. Intellectual Property technical support, Expert witness

Entropix – Victor, NY

Senior Principal Engineer 9/2016 - 7/2018: RF Signal processing, DSP coding, Software defined radios. SIGINT: AOA, TOF

ITT/Exelis/Harris – Rochester, NY

Senior Image Scientist 8/2012 - 9/2016

Principal Investigator: System performance modeling and simulation project supporting space-based imaging systems.

Eastman Kodak Company. – Rochester, NY

Senior Principal Image Scientist 10/2008 - 5/2012

Digital Capture and Devices Manager Image Science

KEY RESPONSIBILITIES

- Maintain and advance Kodak's image science capability in consumer devices.
- Direct, mentor and support the activities of 12 Image Scientists
- Digital Capture and Devices business deliverables:
 - Image/Video/Audio quality test development.
 - Image Science competency for development of digital cameras in a Mobile environment
 - Technology roadmaps
 - Technology transfer from research labs and to ODM partners
 - Product Planning & Commercialization

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Eastman Kodak Company (continued)
Research Engineer 9/1997 - 10/2008
Senior Software Engineer 6/1995 - 9/1997

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KEY RESPONSIBILITIES

- Development, analysis and deployment of image processing chains and devices
- Prototype and demonstration of novel imaging technologies
- Transfer of Research Lab technology into products
- Creation of product code for desktop and firmware platforms
- Created image processing path and product software to support Kodak consumer raw files
- Software Architect and Lead Engineer for world's first consumer USB device
- Designed and implemented image editing processing chain for the Kodak EasyShare Software (> 25 million users)

PRODUCTS:

Image Stitching Products: Surround View, Drone 360° view, 180° view sports camera 2020-2023
Image Stabilization using IMU for intra and interframe stabilization 2019
HDR Camera Products: Autonomous vehicles products, VR 2020-2022
Kodak Digital Camera Line: Smart Capture Feature; Inventor, initial implementation. 2008-2012
Motorola ZN5: Lead Image Scientist, digital camera feature. 2008
EasyShare Software: Image Processing Path, Raw Editor, Image Editor: 2005/2006
V570/V603/V610/C875 Digital Cameras: Exposure, flare, hue correction algorithm for panoramic stitching 2005
P850/P880 Digital Cameras: Raw File Workflow, File Format and Features, Raw Editor Design 2005
Printer Dock Plus Series: Image Processing Path Design/Reference Code, 2004
DX4330/LS443 Digital Cameras: Extended Gamut processing path, 2002
DCS720x Digital Camera: Modeling of CMY sensor to predict high ISO performance
MC3 Digital Camera: Developed Image Capture and Review Mode Firmware 2001
PPM200 Printer: Developed Enhance Feature Firmware 2000
DVC 323 Digital Video Camera: Software Architect, AE, AWB, Image Path, 1997
DVC 300 Digital Video Camera: Software Architect, Software Lead, AE, AWB, Image Path 1996

EDUCATION/PROFESSIONAL TRAINING:

Rochester Institute of Technology, Rochester, NY, M.S. Image Science: 1997
Clarkson University, Potsdam, NY, B.S. Electrical Engineering: 1983

DevelopMentor, Essential C#: 2006, Essential COM 1998
NeuralWare Inc, Applying Neural Networks in Business, Industry and Government: 1992
Bechtel AI Institute, Nexpert Expert System Shell and API: 1991
Rochester Institute of Technology, C Programming Seminar: 1988

PATENTS:

US10789684, Sep 2020, Method, apparatus, and system for multilevel bilateral noise filtering
US9438899, Jun 2016, Statistically lossless compression system and method
US8760527, Jun 2014, Extending a digital camera focus range
US8754953, Jun 2014, Digital camera providing an extended focus range
US8737755, May 2014, Method for creating high dynamic range image
US8736716, May 2014, Digital camera having variable duration burst mode
US8665340, Mar 2014, Indoor/outdoor scene detection using GPS
US8488015, Jul 2013, Camera using preview image to select exposure
US7623722, Nov 2009, Animated display for image manipulation and correction of digital image
US7453498, Nov 2008, Electronic image capture dev. and image file format providing raw and processed image data
US7292267, Nov 2007, Dual mode imaging and camera system
US7289663, Oct 2007, Producing an extended color gamut luminance-chrominance digital image for a captured image.
US7064785, Jun 2006, Apparatus and method of correcting for dark current in a solid state image sensor
US6731797, May 2004, Color dependent luminance processing
US6069377, May 2000, Image sensor incorporating saturation time measurement to increase dynamic range
US6005613, Dec 1999, Multi-mode digital camera with computer interface using data packets combining image and mode data

PROFESSIONAL SOCIETY:

IS&T Rochester Chapter: Recording Secretary 2022-2024