Omid E. Kia
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Expertise:

Software: Full lifecycle software development as requirements management, solution architecture, implementation and testing. Large and small scale software development ranging from Enterprise class solution development to small embedded real time software development. Design and develop large array of algorithms for signal, image, video and content processing. Performance and algorithmic analysis of software components with strong mathematical basis.

Hardware: Large image/video-based hardware solutions with pipeline and microprocessor based system for simple and complex applications. Interface of high performance imaging components into a digital infrastructure at chip and camera level designs. Single board systems with high performance devices for time critical controls.

Science: Strong ability for analysis and understanding of all diagnostic imaging modalities such as all X-ray, Nuclear Medicine and Ultrasound imaging modalities in terms of energy source, detectors and intermediate processing. Proven record of introducing new concepts to existing problems using physical and mathematical models. Strong ability to analyze, design and develop signal/image/video/content processing algorithms and in particular develop various computed processing algorithms for demanding problems.

Accomplishments:

Chief Scientist, Northstrat: Grew new science ventures while supporting customer contract on a full-time basis.

Chief Engineer, ITT Exelis: Grew the company footprint at the customer site by promoting technical solutions and demonstrating associated value.

Principal Engineer, ITT Exelis: Patented IP and grew initial project to a long term processing chain effort at customer site.

Senior Scientist, ITT Exelis: Patented IP in fields of LIDAR, FMV, Space Weather and Radars. Landed $1.5M project associated with only one pursuit.

Chief Scientist, Imaging Sciences: Grew the company from a $2M company to $145M and beyond with a revolutionary dental imaging machine.

President, Sigma Vision: Developed revolutionary x-ray imaging product for veterinary market that is currently supporting three separate companies worldwide.

Expert Witness Cases:

District of Delaware – Fenster Family Patent Holding *et al.* v. Philips Medical *et al.* – Consultant and arbitration for the plaintiff.

4:03-CV-276 – Eastern District of Texas, Sherman – STM v. Motorola *etc al.* – Expert report for the plaintiff.

C.A. No. 04-0048 – District of Delaware – Fenster Family Patent Holding *et al.* v. Siemens Medical Solutions USA *et al.* – Expert report and Deposition assistant for the plaintiff.

04-CV-01363 – Southern District of New York – John Amico *et al.* v. Nhega LLC *et al.* – Expert report for the plaintiff.

2:08CV389 – Eastern District of Texas, Marshall Division – Hospital Systems Corporation v. General Electric Company *et al.* – Expert report for invalidity for the plaintiff.

22-C-09-000274 MM – Circuit Court for Wicomico County, Maryland, Diana Donaway et al, v. Jodi D. Jones M.D. et. al. – October 2010 – Expert for Defendant on HIS system.

Patent Interference No. 105,890 (SCM) – USPTO: Patent Trial and Appeal Board – Andreas Kotowski *et-al* (Rapiscan Systems, Inc.) v. Richard Mastronardi et-al (American Science and Engineering Inc.) – June 2013.

2:10-CV-00029 – Eastern District of Texas, Marshall – Princeton Digital Image Corporation v. Canon Inc *et al.* – Expert consulting for plaintiff.

Patent Re-examination 90/013,078 – USPTO: Declaration for patent examination for Joseph P. Jaronczyk Jr. of LittelFuse, Inc. – June 2014.

2:13-cv-0052 – Eastern District of Texax, Marshall – Trover Group Inc. etc. al. v. Tyco International LTD et. al, - April 2014 – Expert for plaintiff.

1:14-cv-00261-UNA – District court for the District of Delaware – Celebrate International LLC v. LeapFrog Enterprises, Inc. et. al., February 2014 – Expert for plaintiff.

Inter Partes Review of US Patent No. 5,751,346, AXIS Communications Inc. et. al. v. Trover Group Inc. – United States Patent and Trademark Office before the Patent Trial and Appeal Board – December 2014 – Expert for Defendant.

Civil No. 385518V, The Circuit Court for Montgomery County, Maryland, ProExpress Distributors LLC v. Grand Electronics, Inc. Et. Al., February 2015 – Expert for defendant.

2:13-cv-1047-JRG Consolidated Lead case, United States District Court for the Eastern District of Texas Marshall Division, Trover Group Inc. and the Security Center Inc. v. Dedicated Micros Inc. et. al., April 2015 – Expert for plaintiff

12CV0380 CAB (DHB) United States District Court Southern District of California, SONIX Technology Co. Ltd. v. Kenji Yoshida and Grip IP, PTE, Ltd, April 2015 – Expert for defendants.

1:11-cv-00117-LY Consolidated Lead Case, United States District Court for the Western District of Texas Austin Division, Source Prose, Inc. v. AT&T Mobility et. al, May 2015 – Expert for Plaintiff.

13-cv-453-SLR-SRF, United States District Court for the District of Delaware, Intellectual Ventures I et. al, v. Toshiba Corporation et. al. December 2015 – Expert for Plaintiff.

6:14-cv-680-RWS, Consolidated case, United States District Court Eastern District of Texas Tyler Division, TracBeam LLC, v. T-Mobile US, Inc. et al, and TracBeam LLC, v. Apple Inc., March 2016 – Expert for Plaintiff.

2:15-cv-1503, United States District Court for the Eastern District of Texas, Marshall Division, TIVO Inc. v. Samsung Electronics Co. LTD et al., April 2016 – Expert for Defendant.

IPR2016-00212, Inter Partes Reviewof U.S. Patent 7,974,339, Google Inc. v. Vedanti Systems Limited – United States Patent and Trademark Office before the Patent Trial and Appeal Board – May 2016 – Expert for defendant.

Experience:

Chief Image Scientist, Northstrat Inc., Sterling, VA November 2013 – Now.
Served as the chief image scientist and led research and development efforts with respect to all high technology development efforts. Served as the subject matter expert in the areas of video processing, compression and standards for multiple contracts. Submitted responses to Request for Information and Proposals to area customers for imaging, image processing, remote sensing, content process, signal processing and related technology oriented solutions. Support multiple programs as a subject matter expert as video processing, low light imaging, Lidar data processing, Synthetic aperture radar imaging and data fusion. Perform array of computer vision algorithms and physics-based signal processing and analysis.

Chief Engineer, ITT Exelis, Space Systems Division, Herndon, VA October 2011 – November 2013.
Served as the chief engineer and led technical efforts in an NRO program at the Washington Innovation Center. Developed technical solutions across a large array of image and signal processing problems. Contributed to ground breaking solutions and fundamental shifts in workflow utilizing expertise in mathematics, physics, software development, hardware exploitation, market demand and business partners. Routinely applied a multi-disciplinary approach to complex problems.

Principal Scientist, ITT Exelis Space Systems Division, Herndon, VA September 2012 – November 2012.
After initial research and development in LIDAR super resolution, was awarded a contract to implement and compare results with existing LIDAR super resolution algorithms. Lead a team of scientists to implement and expand on original concept and insert in existing processing chain. Delivered results that exceeded expectations and fundamentally identified shortcomings in the current process flow. Performed this project while serving as the Chief Engineer at an NRO program.

Senior Staff Scientist, ITT Space Systems Division, Herndon, VA June 2009 – October 2011.
Serve as an expert in all pursuits pertaining to remote sensing, surveillance and image/signal processing problems. Primarily served as the lead scientist in all technical activities including space situational awareness, 3D scene modeling, persistence surveillance, super-resolution (for lidar systems), scale space compression (for lidar systems) and space weather efforts. Inventor in concepts leading to patent applications and pursuits. Leader of the Compression Cell, which creates, motivates and organizes current and ongoing capabilities in compression including image, video, volumetric and other data modes within the Space System Division group. Involved with efforts in building ideas matched to pursuits for Full Motion Video, Situational Awareness, Space Weather and several Surveillance initiatives as the primary scientist. Interests include volumetric processing, multi-mode image/data processing, radar processing, automatic target recognition, computational imaging, compression and knowledge management which involves preliminary work for submittal into corporate and government channels for funding opportunities. These efforts require substantial knowledge of the current state of the art and fundamental understanding of strengths and weaknesses of prevailing methodologies in order to make a viable case for pursuit.

Expert Consultant, Part-time consulting, Jan 2002 – now.

Perform expert consulting for Intellectual Property and High Technology development. Intellectual property consulting in all areas of high technology and in particular, imaging, compression, encryption, standard based encoding, consumer devices, medical devices, patient management, embedded solutions and smart energy. Work involves expert analysis of portfolio holdings, analysis of potential infringers, licensing opportunities and litigation support. High technology development in areas of medical imaging, electrical health record, medical devices and smart energy devices have been pursued with inventions being pursued. Consult in dental imaging and in particular Cone Beam Computed Tomography and Podiatric Radiography. Perform consulting for law firms, patent analysis firms and high technology companies.

Chief Scientist, Imaging Sciences International, Inc. Hatfield, PA Jan 2004 – April 2009.
Chief Scientist and director of digital X-ray Development. Perform, direct and manage all technical directives falling under digital imaging including software development, hardware development, receptor development and various signal/image processing algorithms. As chief scientist I performed the first look at all 3rd party technology suggestions and assessed value for our product. These spanned technologies across software, hardware and physics based (primarily x-ray and visible light) solutions. Spearheaded a detector development effort which involved working with internal and external resources along with performance based selection of outside vendors. These detectors are designed to operate under very low light conditions and efficient manner. Served as the primary Intellectual Property Manager for all patent related work for Imaging Sciences and other sister companies, under the Danaher umbrella, dealing with imaging work. In this capacity I managed a group of scientists and lawyers to address all aspects of patent related issues including foreign filings, office action response, infringement cases and new technology protection. Write detailed white papers, patents and articles for state of the art technologies. Performed due diligence activities for large purchases in terms of technology assessment, competitive analysis, resource utilization and product roadmaps. This was the lead technical role in several acquisitions.

In a development capacity, developed and inspired unique functional components for a next generation head and neck computed tomography unit. Invented algorithms in scatter correction, focal trough detection and various visualization mechanisms. Developed a revolutionary panoramic image capture modality that enables the practitioner to perform unprecedented imaging. Performed management duties for volume understanding (segmentation, estimation and detection of physical shapes) and movement detection algorithms for integration into a motion corrected sensor. Developed hardware assisted processing to offload processing requirements to dedicated components using soft core FPGA programming, embedded LINUX, integrated microprocessor devices and software interface. Various Optical, X-ray and Nuclear image modalities are used to enable a growing market segment.

President, Sigma Vision Inc. Rockville MD Jan 2002 – Dec 2003.
Co-founder of Sigma Vision which was originally incorporated to serve as a shell for consulting activities in the high technology area specifically in the image and signal processing platforms. Researched, designed and developed a line of products which spans Radiography/Fluoroscopy imaging in X-Ray modality, **Computed Radiography** (CR) in X-Ray modality, **Digital Radiography** (DR) in X-Ray Modality, Picture Archiving in all modalities and various image processing packages. Provided detailed expertise to vendors that have development work in the same area. In all aspects of this work, performed cutting edge HW/SW techniques to provide a solution along with algorithm development to overcome sensor shortcomings. The result was a stable and cost-effective offering to small and medium size diagnostic imaging centers. Performed research with several national laboratories for custom signal processing such as adaptive contrast enhancement, image stitching and mosaic, cone-beam CT and other diagnostic related imaging. The diagnostic imaging products were applied to human, veterinary and non-destructive testing applications. In a non-medical capacity, Performed several large scale consulting in areas of **Video over IP**, debugging proprietary image processing algorithms, serve as **expert witness** in large scale patent litigations and general medical imaging product development.

Senior Vice President, Portris Inc. Reston VA February 2001 – November 2001.
In charge of front-end **application development**, all **research and development** effort, high level **algorithm development** and technology assessment. As the first technology hire of Portris Inc., helped implement the company for product development and Venture Capital funding, provided key technology and solutions in order to achieve a suite of meaningful patents, defined product suite and development plan and in-depth architecture and planning of the product. Formulated the basis of a collaborative knowledge management system by

separating content and presentation; and further decomposing content in terms of a relational paradigm of basic constituent atomic knowledge elements to for a higher level of understanding. Implemented the relational aspect in a database utilizing an appropriate **data model** that supported several abstract applications. Also provided key components of knowledge representation and modeling from inception to development. Was the leading technology and solution provider in all areas of **computing, operating systems, development platform, front-end systems, back-end systems and knowledge representation.** Served as the chief scientist for all of the technical related activities.

Principal Consultant, Sigma Vision, Inc. North Bethesda, MD July 2000 – May 2002.
Performed consulting services, which included proposal writing, submission, research and development. Wrote proposals for **Video Over IP, Video surveillance and Document Duplicate Detection** for submissions to government and private industry. Performed research and development in **Video Over IP** for thin clients that were java enabled. Performed design, analysis and modeling of the system for a complete software development cycle. Served as an expert witness in patent enforcement phase of Intellectual Property Law. Researched and analyzed various **X-Ray imaging** products and provided insight into their software, hardware and physics based operations. Provided technical assistance for medical imaging companies in planning, development and debugging of their systems. Developed imaging workstations for Computed Radiography, Special Purpose Video Capture and overall system design and integration. Developed embedded solutions for X-ray arm and table movement for collision avoidance.

Chief Technical Officer, IMACOM, Inc. Rockville MD October 1999 – January 2001.
In charge of all technical work including hardware and software research, design and implementation for **X-Ray medical imaging** application. In this position, developed software and hardware solutions, debug software and hardware problems in the system and formulated company strategy for attainable product bases. In this position, as hardware designer, used Field Programmable Logic Array to develop a **video pipeline processing, real-time storage** of live video to computer hard disks, develop **analog filter and signal exchange banks** for analog signals, designing and integrating custom graphics video cards and control systems**.** Also in this position, as software engineer, designed **threading software for real-time storage,** improved **image processing** capabilities and compression, created custom software, and planned, designed and implemented new customer solutions. In this capacity, managed a group of hardware and software engineers, planned and estimated project life-cycles, and was involved with new technology research and development such as **high resolution ultrasound imaging**, large format X-Ray imaging and **Video Surveillance.**

Electronics Engineer (Research Scientist), National Institute of Standard and Technology, Gaithersburg, MD (NIST), April 1997 – November 1999.
Member of the Multimedia and Digital Video Group, Advanced Technology Division and Information Technology Laboratory. Worked on various projects including **document image processing**, an extension of Ph.D. research, **Large image-browsing, multimedia compression and communication, medical image understanding, digital library metrics,** and **image and video indexing** problems. Used **mathematical formulation** and **media processing tools** to find new and innovative techniques to archive, process and transmit information. Worked on **pattern recognition and feature extraction** research for medical application. Initiated interest in **video indexing** and **digital library metrics** research in the group. Performed as a principal investigator in the above projects. Attended MPEG standardization meetings to provide technical expertise to NIST's Advanced Technology Program's initiatives.

Affiliate Research Scientist, Center for Automation Research (CfAR), Language and Media Processing Laboratory (LAMP), University of Maryland, College Park MD, April 1997 – present.
Hold an affiliate research scientist position at LAMP to collaborate with researchers at the lab in areas such as **video indexing and image enhancement and multimedia processing, archiving and indexing.**

Part time lecturer, University of Maryland Baltimore County (UMBC), Department of Computer Science, August 1998 – September 1999.
Held a lectureship position at UMBC teaching Assembly language programming. This position is held under an accredited program for a computer science curriculum.

Graduate Research Assistant (GRA), Center for Automation Research (CfAR), University of Maryland, College Park, MD March 1995-April 1997.

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Sync your system to PACER to automate legal marketing.