

Vladimir OVOD

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Over 15 Years Experience in System Engineering, Design, Integration and Testing of Electro-Optical/IR Systems, Sensors and Imagers for Measurements, Control, and Characterization from User Stories / Requirements - through Military-Proven Model-Based Design, MKS/PTC tool and Agile SCRUM management, and Metric-Driven Verification - to Integration, Automated Tests, Production, and Applications

- Night vision systems (for FLIR; Air Force Research Laboratory; Raytheon, Teledyne, Inc.; SE-IR Corporation)
- Focal Plane Arrays (FPA) sensors/systems for target detection and tracking
- Image Processing (FPGA, Matlab, C)
 - Systems engineering of complex IR/EO-systems
- Laser Detection and Ranging (LIDAR)
 - Phase Doppler Anemometers (PDA)
- Laser systems for automated tests and measurements
 - Imagers and control systems

Over 15 Years in Algorithm / Software Development and Systems Modeling / Simulations

- Electro-optical and IR systems/sensors
 - Automation of algorithms- and system tests
- Algorithms and software for DSP and image processing
 - Embedded software to control hardware
- Firmware and software design using Matlab, Xilinx Sysgen, ISE, C

PATENTS (algorithms claimed)

Radiometry-based multi target detection (LIDAR as Advanced Doctor Assistance System, ADAS, for patient safety); embedded software and control algorithms

1. V. Ovod: "*Method and Apparatus for Protection from High Intensity Light*" (patented worldwide):
 - European patent EP # 2547093B1. Granted in 2016
 - Canadian patent CA # 2777974C. Granted in 2016
 - Japanese patent JP # 5745469B2. Granted in 2015
 - USA patent US # 8,878,920B2. Granted in 2014.
2. V. Ovod. USA US # 20150116470A1. " *Method and Apparatus for Controlling Light Output Intensity and Protection from High Intensity Light*". Pending, April 30, 2015.

Publications

For over 30 technical papers refer to www.asdvi.com.

EDUCATION

- Ph.D. in electro optical engineering. Ph.D. thesis "*Design, simulation, modeling and metrological improvement of Laser Particle Size Analyzers*"
- M.S. in electrical engineering. M.S. thesis "*Suppression of bulk waves in RF band-pass filters based on surface acoustic waves (SAW) propagation*".

Certificates

- Embedded Systems Development
 - DSP Implementation Techniques for Xilinx FPGA
- Agile SCRUM development process of software and Systems Engineering (trainings)

EXPERIENCE

FLIR Systems, Inc. / Aerospace Solutions, Goleta, CA

March 15 – July 2016

SYSTEMS ENGINEERING CONSULTANT

- Developed Matlab code for data acquiring, analysis, characterization and for automated radiometric tests of FPA IR sensors with programmable test equipment using National Instruments General Purpose Interface Bus (GPIB), USB, RS232, and Ethernet.
- Performed validation of FPA IR sensors.
- Trouble shot and improved C code for image processing. Improved performances of IR sensors.

Karl Storz Imaging, Inc., Goleta, CA

Sept 06 – March 15

SENIOR SYSTEMS ENGINEER

- Used MKS/PTC tool and Agile SCRUM methodologies and led engineering teams in SW, FW and HW design of high-definition imagers.

- Defined architecture of control units for imagers.
- Developed systems requirements documentation, Interface Control Documents, Integration and Test Plans.
- Executed Integration and Test Plans. Designed hardware, firmware (VHDL) and software for data/image processing, and GUI for integration and automation tests of medical electro-optical systems with programmable test equipment. Reduced duration of systems / sensors tests from a week to a few hours and eliminated costs of test equipment.
- Developed algorithms and translated them from Matlab into C for automated tests using LabView. Using Matlab Compiler, designed executable applications including GUI for use by other engineers.
- Developed algorithms for radiometry-based multi target detection (LIDAR as Advanced Doctor Assistance System, **ADAS**, for patient safety) for adaptive control of endoscopic light sources (*patented worldwide*: USA, Japan, Europe, and Canada; see details on Page 1 under Patents).
- Translated image processing and control algorithms from Matlab into C and implemented C-algorithms in microcontroller which sufficiently reduced time of design, integration, and testing of embedded software.
- Tested algorithms using Software- and Hardware-in-Loop simulation. Developed embedded code for Built-in-Tests (Matlab code translated into C and VHDL).

Teledyne Imaging Sensors, Camarillo, CA

Jun 10 – Jan 12

CONSULTANT

- Developed FPGA-based code (VHDL) for scene-based non-uniformity correction (SB NUC) in FPA infrared imaging sensors for military applications.
- Designed Matlab model of the SB NUC correction.
- Coordinated implementation, test, and verification of the SB NUC.

Nova Sensors, Solvang, CA

Apr 02 – Sept 06

SENIOR SCIENTIST

- Designed a Matlab model of automated low-noise tests of Focal Plane Arrays (FPA) for night vision sensors for Raytheon.
- Developed a broad spectrum of IR image processing algorithms for high frame rate acquisition, detection and tracking of military targets, and for rejection of cluttered backgrounds.
- Implemented the above algorithms in Field-Programmable Gate Arrays (FPGA) sensors at Air Force Research Laboratory (AFRL/MNGI) and SE-IR Corporation for commercial and military applications. SW and FW tools: Matlab, Simulink, Xilinx System Generator, and Xilinx Project Navigator (ISE).
- Presented advanced FPGA-based image processing package for FPA sensors at SPIE Symposiums in 2005 and 2006.

Fujant, Inc., Carpinteria, CA

Mar 99 – Nov 01

SENIOR SYSTEMS ENGINEER

- Developed DSP and embedded software for CDMA RF power amplifiers, including algorithms for adaptive power managements, self characterization, and autonomous failure detection and failure recovery of cellular amplifiers (Design SW tools: Matlab, C).
- Performed system-level analysis, optimization, test, and integration. Used digital and analog test equipment.