

# STANISLAV Z. IVANOV

## OBJECTIVE

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As a passionate engineering professional, I can dedicate as much time and devotion that projects require of me. I am a flexible and accommodating team member, yet I am also very self-sufficient and proficient on a solitary basis. Throughout my career, I have adopted a personal philosophy of continual learning and adaptation, which has allowed me to keep up with new technologies and innovation. I am well-versed with the system design process, from its original specification, to prototyping, debugging, optimization, miniaturization, and packaging. Reverse-engineering for system integration, designing for testability, and automated system adaptation are skills that I have honed with my experience. As such, I will bring valuable expertise to my employer and coworkers alike.

## WORK EXPERIENCE

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2015 - 2018      Sensidyne, LP      St. Petersburg, FL

*Embedded Systems Engineer*

- Provide engineering support for legacy and new products in embedded, mobile, and desktop platforms
- Advance research and development efforts in new technologies and integrate them into SOWs and roadmaps
- Perform detailed cost analysis for high-volume manufacturing projects and interface with vendors and FAEs to streamline new product integration
- Design and test products to Intrinsic Safety, EMC/EMI, and other standards
- Oversee the continued development and release of the software package for the flagship product
- Provide guidance to team members as project manager
- Designed:
  - Custom Bluetooth 4.1 expansion module
  - Custom motion detection module for user-wearing compliance
  - Complete power management systems for new battery technologies
  - Embedded machine vision system
  - High precision capacitive position system
  - Custom fluidic manifolds, valves, and restrictor elements
  - Flexible flow calibrator system with GUI, SD card, USB, interchangeable flow cells, and built-in report generation (4 patents pending)
  - Variable backpressure-compensated dry piston flow cell with adaptive IR position triggering
  - Several new (still unreleased) products
- Oversaw development of custom Android/iOS app for a new product
- Transitioned product development to use on-site and off-site SVN servers to coordinate

with external contractors and in-house engineering

- Added bootloading capability to existing and new products, wrote packaging software for encrypted code distribution, and wrote automated upgrading software for customers
- Modernized test fixtures with Arduino-based touchscreen, quickturn custom shield boards, datalogging, and integrated programming capability
- Cypress PSoC and NXP Flexis microcontrollers

2012 - 2015      Intelligent Micropatterning LLC      St. Petersburg, FL

*Sr. Software Engineer*

- Oversaw the continued development and release of the software package for the flagship product
- Mentored junior software and electrical engineers through all phases of assigned projects
- Guided customers with specifications, performed design reviews, and installed prototype/first rev equipment
- Oversaw continual improvement of cleanroom and manufacturing facility, as well as processes
- Upgraded and designed new hardware modules for flagship and supporting products
- Designed:
  - multitude of wafer optical focusing techniques for high-resolution/flexible optical exposure system
  - fiber-optic spectrometer-based intensity meter
  - non-IR front-to-back alignment system for wafer alignment/exposure
  - multi-sensor temperature compensation for opto-mechanical system with indirect system estimation
  - confocal laser focusing system
  - high-temperature thermo-electric ramping hotplate (patented) with feedforward and feedback controls through thermal modeling
  - hardware emulators for module field-upgrades for older systems and software emulators for system development
  - exposure and alignment methods for concave and convex round substrates
- Integrated wafer-handling robot and pre-aligner for high-throughput lithography system
- Modernized relay logic and switch interlock circuits with PLC

2010 - 2012      Raytheon Company/NCS      Largo, FL

*Electronic Troubleshooter*

- Tested, operated, and repaired radio equipment and supporting modules
- Identified root cause within supply chain, assembly processes, and test procedures
- Worked on J-STD Class 3 assemblies
- Became primary troubleshooter for the module line for all three shifts
- Resolved compatibility issues between UUTs and test systems
- Helped improve ATE software
- Wrote troubleshooting procedures for previously word-of-mouth processes
- Identified and resolved issues with non-conforming IC batches, software load-set incompatibility, and electrical designs flaws

2009 - 2010      BioPlex Inc      St. Petersburg, FL

*Electrical Engineer*

- Identified and corrected the design, build, and operational issues of initial product offering
- Helped bring product from prototyping to production stage
- Designed a four-channel handheld isothermal integrating fluorometer and analytical software
- Silicon Labs USB microcontrollers

2007 - 2010      Voda LLC

St. Petersburg, FL

*Lead Research and Development Engineer*

- Founded the company with three other partners
- Provided vision for new product development and continual product evolution
- Was responsible for electrical, software, and system engineering in a multidisciplinary team
- Licensed our own technology from the University of South Florida and upgraded all subsystems of our underwater ion-trap mass spectrometer (embedded computer, electrical, vacuum, and sampling)
- Created HD IP camera based on TI DaVinci platform
- Continued evolution of:
  - power management platform
  - CTD platform
  - sensor buoy platform
  - sampler platform
  - underwater ion-trap mass spectrometer

2003 - 2007      Intelligent Micropatterning LLC

St. Petersburg, FL

*Electrical Engineer*

- Was responsible for electrical and software engineering aspects of flagship product
- Customized product, then created BOMs and built customer product
- Traveled internationally and installed product at customer site
- Developed and licensed technology from COT/USF
- Designed a step and repeat automation system for maskless photolithography
- Created a 5-axis automation stage with high accuracy and repeatability
- Designed precision optics and DLP UV system
- Developed a process for maskless photolithography on different substrates
- Developed many of the alignment and calibration methods and procedures for the product

2001 - 2009      Center for Ocean Technology, CMS, USF

St. Petersburg, FL

*Research Assistant / Electrical Engineer*

- Was responsible for electrical and system engineering aspects of projects in a multidisciplinary group. Wrote grant proposals, papers, and presentations. Ensured that deliverables met deadlines.
- Wrote microcontroller firmware and PC interface software
- Designed and qualified environmental sensors with maskless photolithography techniques
- Designed analog and digital circuitry for sensor conditioning
- Automated data acquisition and analysis
- Miniaturized and optimized fielded environmental sensors

- TI MSP430, HC11, HC16 microcontrollers

Summer 2001      Center for Ocean Technology, CMS, USF      St. Petersburg, FL  
*Intern*

- Wrote PC-based software development for data collection
- Integrated MEMS sensors in a custom medical mannequin platform
- Designed analog and digital circuitry for sensor conditioning

## EDUCATION

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2006 - 2008      University of South Florida      Tampa, FL  
*MSEE*

- Graduated Summa Cum Laude, control systems program track

2003 - 2005      University of South Florida      Tampa, FL  
*BSEE*

- Graduated Summa Cum Laude, outstanding graduate award

2002 - 2003      St. Petersburg College      St. Petersburg, FL  
*AA*

- Graduated Summa Cum Laude

2001 - 2002      St. Petersburg Junior College      St. Petersburg, FL  
*Early Admission*

- Dual-enrolled: combined senior year of high school with freshman year of college

## PATENTS AND PUBLICATIONS

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4 – peer reviews publications

9 – publications and proceedings

11 – presentations

2 – patents pending

2 – patents awarded and licensed

2 – trade secret disclosures

## LANGUAGES

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Machine – Assembly, C, C++, C#, and .NET experience

Human – Fluent: English, French, Bulgarian. General knowledge: Russian, Spanish, Latin

## TECHNICAL SOFTWARE

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Circuit design and layout

- OrCAD (Capture, PSpice, Layout)
- ExpressPCB

- Altium
- Windows IDE
- NI CVI/LabView
  - MS Visual Studio
- Embedded IDE
- IAR Workbench MSP430
  - CodeWarriror for Flexis
  - Cypress PSoC Creator
  - Trinamics TMCL
  - Xilinx ISE Webpack
  - Arduino IDE/Eclipse
- Motion controllers
- ACS/DeltaTau/Aerotech/Applied Motion
- Machine Vision
- NI Vision Development Module and Vision Acquisition System
- Math packages
- Matlab
- Office packages
- Microsoft Office

References are available upon request.