Michael Edick
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Résumé
Michael Edick

PROFESSIONAL FIELDS

- Space-Qualified Analog / Digital Board Designer
- Satellite Systems Engineering
- Space Sensor Signal Conditioning Designs
- Instrument Power Supply Design
- Skilled Laboratory Test / Development Engineer
- CAD/CAM Schematic Designer, PSPICE-Simulator
- Engineering Department Management

- Electrical Ground Support Equipment Designer
- PCB/PWB Layout Design, 3D-Model Design and Simulation
- Industrial Low-Noise Analog Sensor Design
- Embedded micro HVAC(R), PID, Controller Design
- Vibration, SONAR, Acoustic, Electrical, Mechanical Experience
- Technical Writer, BOM/PL Database Generation and Maintenance
- WOA, PR, PFR, ECN, ECR, SCoRe Generation and Maintenance

EDUCATION AND AWARDS

- B.S., Electrical Engineering Technology, S.U.N.Y. Utica/Rome (NY), 1990
- A.S., Electrical Engineering, Jefferson Community College, Watertown (NY), 1988
- NASA AETD (Applied Engineering Technology Directorate) Science & Technology Advancement Award, 2014
- President's Award for Innovation, Wilcoxon Research, 2003
- Tau Alpha Pi National Honor Society, Who's Who Among American College Students, 1990
- Published several technical papers and presented at eleven technical conferences

WORK EXPERIENCE

Over 20 years of professional electrical design experience, including infant-to-grave high-level product and systems-engineering through component-level electrical design and test. Direct, hands-on, design and support of electrical products for Medical, HVAC(R), Industrial, and Governmental (Nuclear Non-Proliferation, Undersea Mine-Detection and Surveillance, DARPA Research, and Space Satellite System) customers. A sole focus for optimizing manufacturability and reliability, by creating bullet-proof products derived from decades of experience analyzing and designing for Bellcore, Intrinsically-Safe, FM, ATEX, CE, UL, CSA, EMI/RFI, Signal-Integrity, Power-Integrity, high-Vibration, and high-Radiation approved products.

2011 – Present: Sr. Staff Engineer, Florez Engineering LLC., a premier engineering space-technologies company
- 2015 - Present: NASA GSFC, OCI *Mechanism Control Electronics Electrical Design Lead*
  PACE (Plankton, Aerosol, Cloud, ocean Ecosystem) OCI (Ocean Color Imaging) Instrument
  - Designed 12-layer RMU (Risk-Mitigation Unit) dual 3-phase motor controller with four position encoder board
  - Designed 6-layer RMU daughter-card with encoder conditioning and high-power PWM-filtering
    a. 1300-component Altium Designer SCH/PCB/3D, SPICE; test-plan development
- 2015 - 2016: NASA GSFC, ICESat-2 ATLAS *Electrical Integration and Test Engineer*
  ATLAS (Advanced Topographic Laser Altimeter System) Instrument
  - Technical writer, cleanroom electrical integration and test, Laser-Safety Operator, EMI, TVAC Test-Director
    a. Electrical integration and troubleshooting of flight instrument subsystems, directed tests and personnel
- 2013 - 2015: NASA GSFC, ICESat-2 *Mechanism Control Electronics Electrical Design Lead*
  ATLAS (Advanced Topographic Laser Altimeter System) Instrument
  - Designed two 14-layer Spaceflight Gimbaled 2-axis voice-coil and paraffin actuator controller boards
  - Designed two 14-layer Engineering Test Unit voice-coil and paraffin actuator controller boards
  - Designed 8-layer Daughter-Card motor-driver commercial-replacement proof-of-concept board
  - Designed 8-layer Electrical Ground Support Equipment communication interface board
    a. 1400-component Altium Designer SCH/PCB/3D, SPICE, Worst-Case / Power / Thermal Analysis
- 2011 - 2013: NASA GSFC, LANDSAT LDCM TIRS Main Electronics Box (MEB) *Electrical Integration Lead*
  TIRS (Thermal Infra-Red Sensor) Instrument for LDCM (Landsat Data-Continuity Mission)
  - Integration / test of 7 boards, operational testing of electronics box at EMI, TVAC, and Spacecraft I&T
    a. Electrical integration and troubleshooting of flight instrument subsystems, directed tests and personnel

2009 – 2011: Sr. Systems Engineer II, MEI Technologies, Inc., an engineering services company
- 2011 NASA GSFC, CLARREO *Mixed-Signal Specialist, Board Design Lead*
  CLARREO (Climate Absolute Radiance and Refractivity Observatory)
  - NASA-platform concept-developer of COTS-technology replacement for ASIC-imager
    a. Designed, simulated, fabricated, developed FPGA-based ROIC-interface for Air-flight prototype
- 2010 - 2011: NASA GSFC, LANDSAT *Command & Data Handling Board Electrical Design Lead*
  TIRS (Thermal InfraRed Sensor) Instrument for LDCM (Landsat Data-Continuity Mission)
  - Designed 14-layer Spaceflight 128-channel low-noise analog acquisition board with Spacecraft communications
  - Designed 14-layer Engineering 128-channel low-noise analog acquisition board with Spacecraft communications

- Designed 12-layer proof-of-concept engineering unit for thermal-chamber test use
- Designed two EGSE interface boards for high-level discrete, LVDS, 422, and 1553 communicaitons
  a. 1900-component Altium Designer SCH/PCB/3D, SPICE, Worst-Case / Power / Thermal Analysis
  b. Extensive hands-on laboratory testing at every stage: thermal chambers, liquid nitrogen
- 2010 - 2010: NASA GSFC, ASTRO-H Satellite Mission, ***ADRC Cold Monitor Card Electrical Design Lead***
  Adiabatic Demagnetization Refrigerator Controller (ADRC-CMC)
  - Schematic capture and SPICE modeling of CMC design
  - Design reviewer of Cold Control (CCC) and Warm Monitor and Control (WAMC) for EPR / Pre-CDR / CDR
- 2009 - 2010: NASA GSFC, LANDSAT ***Command & Data Handling Board Analog Designer***
  TIRS (Thermal InfraRed Sensor) Instrument for LDCM (Landsat Data-Continuity Mission)
  - Power, Thermal, Mixed-Signal Design Specialist, Technical Writer
    a. SPICE, laboratory prototyping, low-noise analog design of transistor-based temperature-sensing monitor
- 2009 - 2010: NASA GSFC, ICESat-2 ***Instrument Electronics Module Proposal Writer***
  ATLAS (Advanced Topographic Laser Altimeter System) Instrument
  - Power, Thermal, Technical Writer, Mixed-Signal Design Specialist, Level-4 Specification Writer
    a. MATLAB, SPICE-simulation of PID, Power, Sensor Signals
- 2009 Obtained NASA Security Clearance; eligible to obtain DoD Security Clearance

2000 - 2009: Wilcoxon Research, ***Sr. Electrical Design Engineer, Manager of the New Product Development Group***
- Inventor / designer of dozens of revolutionary company projects:
  - Vibration Transmitter (IT1XX, IT2XX), Vibration Alarm (IT401), Vibration Communications (IT501)
  - 16-bit 100KSPS digital dynamic industrial accelerometer (997D, 787D), Digital PC420 sensors
- Lead design engineer of over forty revolutionary company projects:
  - 997D, DIG420, PC420, FN8-3, FN8-4, 200°C Sensor, CSI V727/V747, P721DIN , IT712 Wireless 802.11b
  - Developed intricate analog, digital, and software designs for sensitive accelerometers
  - Utilized Microchip, TI, Atmel, and Netsilicon ARM-7 microcontrollers in many product designs
  - Protel99 / Altium Designer SCH / PCB / 3D, SPICE, DFM, Automated Test Equipment Designer
  - Designed with membrane-switch Flex, Alumina, FR-4, and Polyamide board technologies
  - Created technical documentation, product literature, interface and control documents, operator's manuals
- Project Manager of several internal and customer-driven product developments
  - Supported all aspects of ISO9000, ISO9001, and AS9100 certifications
  - FM / IS / CSA / MSA Intrinsically-safe and explosion-proof designs, Bellcore reliability
- Lead Production Engineer
  - Oversaw all production-related technical issues, designed or directed as required
  - Responsible engineer for all ECR, ECN, and documentation updates
  - In-house and on-site customer support of new or existing products
- Promoted several times:
  - Hired in 2000 as Intermediate Electrical Design Engineer
  - Promoted to Sr. Electrical Design Engineer in 2002
  - Promoted to Manager of New Product Development Group in 2004
  - Promoted to Engineering Manager in 2009

1997 - 1999: International Controls and Measurements, ***Electrical Design Engineer***
- Responsible for entire HVACR electrical controller designs, from concept through production:
  - SPICE, SCH-entry, laboratory testing
  - Designed and built hardware prototypes utilizing Microchip, Motorola, SGS micro-controllers
  - Wrote all micro-controller firmware, verified operation of production samples
- Responsible for technical training of ICM employees, dealers, and customers:
  - Technical writing, technical support, training for every product produced by ICM
  - Conducted nation-wide dealer technical training seminars, company booth operations at HVACR conventions

1990 - 1997: ServiceMaster Clinical Engineering, *Certified Biomedical Engineering Technician*
- Specialized in factory-trained maintenance of X-Ray equipment for a group of hospitals
  - Medical Linear Accelerator (particle-collider), three CAT-scanners, 30 general X-RAY units
  - Intensive-care monitors, telemetry, defibrillators, surgical instruments, video equipment, anesthesia equipment
  - Trained new doctors and nurses on operation of medical equipment, clinical trials of new medical equipment

1991 - 2000: Edick Enterprises, *Owner / Operator*
- Retail personal-computer sales, service, networking, training, and company operations in Upstate NY
  - Grew from just-over $10K-annual in 1991 to 7-employees and over $265,000 gross annual sales in 2000
  - Expanded services to include Internet Web page design and hosting, computer training

TECHNICAL SKILLS INFORMATION:
- Computer equipment: IBM4371, Honeywell System-V, PC, PC-AT, PC-clone, PC/104, SBC, Apple-II, Mac
- Operating systems: DOS, Windows 3.1/3.11/95/98/NT/2000/XP/Vista/7/8/10, UNIX, Linux
- Computer languages: Assembly, C, C++, C#, Fortran, Pascal, BASIC, dBASE, HTML, Perl, Javascript, Java, FLASH, Action-Script, Matlab
- Engineering software: CAD, CAM, Gerber, Camtastic, Protel-99, Altium Designer, DesignWorks(4.0), SPICE, PSPICE, Multisim, LT Switcher Cad, MathCad, Matlab, Microchip MPLAB IDE, Atmel AVR Studio, TI (IAR) Code Composer, NetSilicon (ARM) Net+OS, Microsoft Office (Excel, Word, PowerPoint), Visio, LTSpice
- Engineering disciplines: Embedded microcontrollers, embedded microprocessors, embedded DSP, low-noise analog (discrete BJT/FET, op-amp, amplifiers, signal-conditioning), mixed-signal (ADC, DAC, references), power (switching, linear, low-drop-out, MOSFET, PMOS, NMOS)
- Communication methods / protocols: serial, EIA/TIA/RS-232/422/485, LVDS, 1553b, SpaceWire, 802.3, 802.11a/b/n, USB, 1394, GPIB-488, parallel, SerDes, S/PDIF, PCM, CAN
- Documentation software: Photoshop, Illustrator, Acrobat, Word, Visio, PowerPoint, Excel

INFORMATIONAL LINKS:
- Florez Engineering LLC, ESES-II / MSES-II / OMES Contract:
  - PACE NASA GSFC: https://decadal.gsfc.nasa.gov/pace.html
  - ICESat-2 NASA GSFC: http://nasascience.nasa.gov/missions/icesat-ii
  - LANDSAT NASA GSFC: http://landsat.gsfc.nasa.gov/about/ldcm.html
- MEI Technologies, ESES Contract:
  - ICESat-2 NASA GSFC: http://nasascience.nasa.gov/missions/icesat-ii
  - ASTRO-H JAXA: http://www.astro-h.isas.jaxa.jp
  - LANDSAT NASA GSFC: http://landsat.gsfc.nasa.gov/about/ldcm.html
  - CLARREO NASA GSFC: http://clarreo.larc.nasa.gov/
- Wilcoxon Research: http://www.wilcoxon.com (http://www.meggitt.com)
- International Controls and Measurements: http://www.icmcontrols.com/
- ServiceMaster Clinical Engineering (sold): http://www.servicemaster.com