

Donald Wilcher  
Phone 901-854-5423  
Cell # 901-574-2404  
Website [www.family-science.net](http://www.family-science.net)  
E-mail [mrdon219@aol.com](mailto:mrdon219@aol.com)

**Objective: Seeking employment as a Senior Level Electrical-Electronics Engineer.**

**Education:**

2004 MIT Sloan School Of Management: Managing Complex Product Development  
Projects Certificate(Executive Education Course)

1986 Wayne State University, Detroit, MI  
Post-graduate work only

1985 Wayne State University, Detroit, MI  
BEE (Bachelors in Electrical Engineering)

1983 Henry Ford Community College, Dearborn, MI  
ASEET (Associates In Electrical/Electronics Technology)

**Skill set Summary:**

- Hands-on knowledge in product development of electrical-electronics devices
- Knowledge in analog, digital circuit interfaces, switching mode power supply circuits (Power Electronics), and microcontroller architectures
- Hands-on knowledge in electronics prototyping techniques and the use of soldering tools
- Hands-on experience of using several electronics test instrumentation for example Digital Multimeters, Oscilloscopes and Function Generators
- Systems modeling techniques using Excel VBA, LabView, and Python programming languages
- EDA tools knowledge consist of using PowerView, dxDesigner, TransCable, PSpice, Electronic Workbench, and OrCad for electrical/electronics circuit design (analog, digital, and microcontroller) & analysis
- Hands-On programming language knowledge using Python, Visual Basic for Applications (VBA), Visual Basic, and C.
- Hands-On knowledge of Prototype Printed Circuit Board Development process.
- Hands-on knowledge Project Management techniques and writing technical specifications
- Hands-On experience in Wireless (RF Circuits) Application Development
- Hands-On experience in writing Product Specifications, Testing Acceptance Plans & Procedures, and Evaluation Reports.

**Professional experience:**

**Hunter Fan Company, Memphis, TN**

**12/05 to present Sr. Electronic Controls Engineer**

- \* Design & Development of Wireless Electronic Controls and Embedded Systems
- \* Management of Asian and Domestic Design Engineers and Firms of Electronic Controls and Embedded Systems
- \* Research and Development of LED Lighting Technologies
- \* Research and Development of Switching Mode Power Supplies
- \* Research and Development of Electronic User Interfaces using Analog, Digital, and Microcontroller circuits.
- \* Build Prototypes of Wireless Electronic Controls and Embedded Systems
- \* Responsible for Product Demonstrations of Wireless Electronic Controls and Embedded Systems.
- \* Research and Development of Smart Energy Devices and Home Automation using Powerline, SNAP Wireless, and Zigbee Technologies.

**Sumitomo Electric Wiring Systems, Dearborn, MI**

**11/2004 to 12/05 Electronics Manager**

- \* Responsible for new Analog, Digital, and Microcontroller based Electronic Controls development in the North America market.
- \* Managing 4 Overseas Japanese Engineers in developing new Electronic Control.
- \* Responsible for the creation of Business Pursuit and Marketing Strategy Plan of Electronic Controls development.
- \* Creating an Electronic Competitive Intelligence System to manage Competitor Product Data and Specifications using Open Source software and VBA Programming language technologies.
- \* Responsible for Team Building between Japanese Engineering and North America Sumitomo groups (Components, Wiring, and Electronics Engineering)
- \* Developed an Emerging Technologies Road Map used to Sumitomo's Electrical and Electronics Architecture to potential North America customers.
- \* Wrote Technology Investigation and Development of Emerging Technologies Budgetary Proposal for Sumitomo Electric Wiring Systems and University of Michigan-Dearborn Joint Venture.

**Usui International Corporation, Plymouth, MI**

**4/2003 to 10/2004 Electrical Engineering Supervisor**

- \* Established and managed the Electronics Lab for in house electrical/electronics for Fan-Clutch product development business.
- \* Managed the electrical/electronics development of the electronically controlled fan clutch program.
- \* Supervised EMC test plans for wiring harness/speed sensor electronics interface of electronically controlled fan clutch.
- \* Supervised EMC tests for electronically controlled fan clutch with local EMC testing facility.
- \* Writing component and system specifications for electronic controlled fan drive.
- \* Mentored department mechanical engineers on Electrical/Electronics design & development techniques and best practices.
- \* Supervisor of 5 direct reports (3 engineers and 2 technicians) who design and develop, and test electrical/electronics of electronic controlled fan clutch.
- \* Applied principles and techniques of electrical engineering to accomplish department goals.

- \* Saved \$5.087 million dollars in product piece cost of an electrical jumper harness for electronically controlled fan clutch within 1 year.
- \* Managed day-to-day activities using New Product Development "V" Model.

**Visteon Corporation, Dearborn, MI**

**1/2002 to 4/2003 Lead Electronics Systems Engineer**

- \* Develop advanced electronics concept design for an exterior LED driver circuit
- \* Conduct tradeoff studies of various DC-DC converters (Buck, Boost, Flyback, and Buck Boost)
- \* Develop flex-circuit substrate for locating and mounting of high light output emitters/LEDs
- \* Develop prototype circuit boards for DC-DC converters
- \* Understand LED electrical/optical performance curves
- \* Understand Pulse-width modulation (PWM) and current mirroring circuit schemes for managing RMS currents for LED switching strategies
- \* Using DxDDesigner for schematic capturing and printed circuit-board development of LED flex-circuit substrate and DC-DC converter designs
- \* Project Manager/designer for LED driver circuits, analog/digital interface circuits, and Microcontroller based Lighting Controls unit.

**11/2000 to 1/2002 Electronics Systems Engineer**

- \* Define and developing applications to standardize and automate Electronic System Design process.
- \* Develop advance conceptual electronic module designs for costing.
- \* Work with the 42V Technology and Sumitomo in identifying opportunities for joint development of Power MOSFET components to be displayed at engineering consortiums and conferences.
- \* Optimize sub-system designs and system architecture.
- \* Lead Engineer developing a 42V Smart Power Distribution Box.
- \* Lead Engineer developing a Smart Junction Box Concepts for Automotive OEMs.
- \* Systems modeling techniques using Excel VBA, LabView, and Python programming languages
- \* EDA tools knowledge consist of using PowerView, TransCable, PSpice, Electronic Workbench, and OrCad for electrical/electronics circuit design (analog, digital, and microcontroller) & analysis.
- \* Hands-On programming language knowledge using Python, Visual Basic for Applications (VBA), Visual Basic, and C.
- \* Extensive Hands-On knowledge of Prototype Printed Circuit Board Development process.

**DaimlerChrysler Corporation (Chrysler Corporation) Detroit, MI**

**10/98-10/2000 Lead Software Test Engineer**

- \* Software Test and Validation of Microcontroller based Electronic Controller
- \* Developing the Next Generation of Automated Electronic Controller Tester
- \* Developed the Automated Test Generation (ATG) process for testing mixed signal units.
- \* Developed Automated testing specifications, test procedures & plans for validating Electronic Controllers.
- \* Created Test Database using MS Access -Query and developed a Test Engine via Excel VBA
- \* Provided Educational Training & Presentations on Automated Testing Technology to engineers and managers.
- \* Provide project management activity for Software testing of electronic controllers
- \* Hands - On system behavioral modeling knowledge using CASE Tool Statemate Magnum.

#### **1/98-9/98 Lead Product Engineer**

- \* Worked on developing Electronic controls specifications.
- \* Trained 4 engineers and 1 Senior Engineer on Systems Engineering and Project Management Techniques for Electronic controls Development.
  - Developed Diagnostics, Microcontroller based Electronic controller Tester Quote Packages and Engineering Specifications.
  - Interior Lighting Subsystem Engineer responsible for electrical architecture development and capturing functional requirements for Backlighting Illumination devices.
  - Developed Subsystem Test Plan for validating Backlighting Illumination electrical devices using an industry based serial communication bus protocol
  - Coordinated IP Lighting Studies for evaluating illumination patterns using Functional Objective customer wants list.

#### **Chrysler Corporation Detroit, MI**

##### **5/97- 12/97 Product Engineer**

- \* Program Manager for Electronic Controller Development 96-98 Model Years
- \* Working knowledge of an industry based serial communication bus Protocol for a niche market microcontroller based electronic controller.
- \* Extensive working knowledge in electronic subsystem circuit design
- \* Trained summer intern students on Chrysler's Product Development Process and EE Systems Design Methodology.

##### **10/94- 5/97 Product Engineer**

- \* Responsible for the design and development of light activated analog sensors, analog, digital and microcontroller sub circuits, security based disarm switches, and Backlighting electronic controls.
- \* EMC (Electromagnetic Compatibility) Coordinator responsible for maintaining EMI (Electromagnetic Interference) integrity of microcontroller based devices

#### **APX International (Contract w/Chrysler Corporation) Detroit, MI**

##### **1/92-10/94 Product Engineer**

- \* Responsible for the design and development of light activated analog sensors, analog, digital and microcontroller sub circuits, security based disarm switches, and Backlighting electronic controls.
- \* EMC (Electromagnetic Compatibility) Coordinator responsible for maintaining EMI (Electromagnetic Interference) integrity of microcontroller based devices

#### **General Motors Flint, MI**

##### **12/90-7/91 Project Engineer**

- \* Developed and implemented a cost savings process which saved the EE Department 10 million dollars.
- \* Provided technical support in generating Cost Reduction ideas to engineers on electromechanical components and electronic modules using DFM (Design For Manufacturing) techniques.
- \* Acted as Liaison Engineer to Supplier Management Department.

##### **4/89 -12/90 Project Engineer**

- \* Worked on wiring and packaging electrical/electronic components and systems.
- \* Interfaced with subsystem Body Structures and Reliability/Test Engineers on design, development, and testing of electrical/electronic components and modules.

- \* Root Cause Engineer working on resolving product changes for EE Design Engineering.
- \* Acted as Resident Engineering for Product Engineering and Manufacturing.

**General Motors (Willow Assembly Plant) Ypsilanti, MI**

**2/86 -4/89 Plant Engineer**

- \* Developed plant/robotics automation and Industrial Electrical/Electronic Controls used for Conveyors, Glass Installation, Welding, and Wheel Alignment Systems.
- \* Developed electrical-electronic specifications for access based security devices and systems
- \* Enhanced access based security devices through electronics hardware modification techniques

**Publications:**

- \* Technical Book published through McGraw Hill Book Publishing, Inc. entitled Lego Mindstorms Mechatronics released in Autumn 2003
- \* Book for published through McGraw Hill Book Publishing, Inc. entitled Lego Mindstorms Interfacing released in Autumn 2002
- \* Internet Robotics Column for Society for Amateur Scientists (SAS), ongoing, since October 2002
- \* Paper published for ASEE, presented at Annual Conference in Nashville, TN June, 2003 entitled Developing Laboratory Based Electronics Software Projects Using a Lego Mindstorms Programmable Brick.
- \* Paper published for ASEE/NCS Spring Conference, Western Michigan University, April 2004 entitled NanoMuscles, Paper Toys, and Robots: Teaching Mechatronics Basics through Animatronics.
- \* "Using a Black Box Test Model to Validate Electronic Controller Software"(Short Summary), 1st DaimlerChrysler Quality Symposium, Oct.16, 2000
- \* "Using a Black Box Test Model to Validate Electronic Controller Software"(Full text), Automotive Test Report, March 2000
- \* Give spreadsheet GUIs a touch of automation", Personal Engineering Magazine, May, 1998
- \* Contributing Writer for Nuts & Volts Magazine, The Solderless Breadbox Column (analog, digital, and microcontroller based projects) 10/92 -9/94
- \* Contributing Writer for Nuts & Volts Magazine: Feature Articles

**Additional professional activities:**

- \* Adjunct Instructor of Electrical Engineering Technology Department: Southwest TN Community College.
- \* Peer-Reviewer for Technology Interface Journal
- \* Advisory Committee Member for Southwest TN Community College and ITT Technical Institute
- \* Former Detroit Board of Education Technical Consultant
- \* Created Engineering Curriculum using self developed hardware, software, and LEGO Mindstorms Robotics Invention System and the Basic Stamp (PIC 16C54 Microcontroller Chip)
- \* Served as a Technical Advisory Committee member for Breithaupt Vocational Technical School
- \* Adjunct Instructor of Computer and Electronics Engineering Technology Department: ITT Technical Institute
- \* Former Lawrence Technology University Industry Advisory Board Member
- \* Former Adjunct Professor of Electrical Engineering Department: Lawrence Technological University
- \* IEEE Section Meeting Speaker October 2003 and March 2004
- \* Virtual Lecturer for Wichita State University, December 2003
- \* Robofest Lecturer for Lawrence Technological University, December 2003

- \* Have taken technical and business classes for continual Career Development
- \* Founder of MaDon Research: Small Business involved with integrating industry practices to engineering education through robotics and mechatronics
- \* Webmaster for <http://www.family-science.net/>

**Professional memberships:**

American Society for Engineering Education  
Project Management Institute (PMI)

**Community activities:**

Merit Badge Counselor for Collierville, TN Troop 56 Boy Scouts  
Former Technical Advisor/Judge to: Robofest Chairman & Founder (Dr. CJ Chung)  
Curriculum and Instruction Director of Garden City Public  
Schools (Dr. Susan Collins)  
Former Program Director: DAPCEP - DaimlerChrysler Wonders of Automotive  
Engineering  
Program 10/94 - 10/00

Former World Of Work Coordinator - DaimlerChrysler Corporation 10/94-10/00

- \* Worked with several elementary, middle school, and high schools on developing pre-engineering programs. I was Program Director for the Wonders of Automotive Engineering Weekend Enrichment curriculum. Program objective was to expose minority students to Automotive Engineering careers through "hands- on" projects, and lab demonstrations.
- \* Enlisted DaimlerChrysler employees to assist in World Of Work program.
- \* Developed weekly Robotics curriculum for 5th & 6th graders at George Ford Elementary School.