

Earl F. Howard Jr. (Frank)

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Web Pages -

http://www.earlfhowardjr.com/pdf/Earl_Howard_Resume.docx (This resume downloadable in MS WORD docx format)

http://www.earlfhowardjr.com/pdf/Earl_Howard_Resume.pdf (This resume downloadable in pdf format)

<http://www.linkedin.com/in/earlfrankhoward> (My LinkedIn page)

<http://www.frankiehoward.com> (My family page)

<http://www.howardcreates.com> (My project page)

Career Objective

Electrical Controls Engineer / Programmer

Professional Experience

Mitutoyo America Corp., Mason, Ohio, March 2024 to Present

Mitutoyo America Corp. is the wholly owned US arm of Mitutoyo, Kanagawa, Japan.

Sr. Automation/Application Engineer

I am designing and programming automated PLC, motion and Safety controls on custom integrated precision measurement systems. I am considered an expert in the following automation control system areas -

- * PLCs and relay ladder logic, function block and structured text programming
 - * Servo, CNC, VFD and robot motion control hardware and programming
 - * Human Machine Interface touch screen design and programming
 - * SERCOS III, EtherNET/IP, EtherCAT, DeviceNet, Ethernet, ControlNet, TCP/IP, ProfiBus, ProfiNET, Modbus and proprietary industrial networking systems
 - * Safety systems utilizing laser area scanners, light curtains and programmable safety relays as well as the application of IEC 13849 and IEC 62061 safety standards
 - * PID and Fuzzy temperature process controls, panel meters and transmitter signal conditioners
 - * Encoders/resolvers, photoelectric, proximity, pressure, ultrasonic and laser sensors
 - * RF-ID, 1D and 2D code readers and machine vision systems
 - * Data acquisition and IIOT / I4.0 solutions using MQTT, OPC UA, InfluxDB and grafana
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AddUp Inc., Blue Ash, Ohio, Jan 2021 to Jan 2024

AddUp Inc. was a joint venture between Michelin and FIVES producing DED and PBF Additive

Manufacturing machines.
AddUp is headquartered in Clermont-Ferrand, France.

Sr. Automation/Application Engineer

I worked with Siemens 5-axis CNC Controls on our DED Additive Manufacturing machines doing system integration with inerting and feeding systems as well as on site start-up and service. I worked extensively with AddUp's Dashboards SCADA system. I worked with Siemens and Beckhoff PLC's and HMI's.

Addup Inc. sells and supports the AddUp and BeAM lines of metal PBF and DED 3D printers.

BOSCH Rexroth, Cincinnati, Ohio, July 2015 to January 2020

With worldwide sales of over \$6 billion and U.S.A. sales of over \$900 million BOSCH Rexroth is a leader in industrial automation servo motor and hydraulic control components.

I worked from my home office. BOSCH Rexroth's U.S. headquarters is in Hoffman Estates, Illinois.

Sr. Application Engineer

My duties included motion and automation controls sales support, programming and training. I mostly worked with Rexroth's high performance servo drives and their CodeSys based motion control PLC and CNC controls. I configured and programmed SERCOS III, EtherNet/IP and EtherCAT servo and I/O networks. I did systems field startup and machine safety design and programming. I supported IIOT hardware and software.

RILCO Industrial Controls, Cincinnati, Ohio, Sept 2012 to June 2015

RILCO is an automation controls distributor. Rilco is now part of TRIAD .

Sr. Application Engineer

My duties included automation controls sales support, programming, training and field service for all of RILCO's product lines. I specialized in automation communications networks, safety systems, code readers, servos and PLCs/HMI. RILCO's major lines are SICK, GEMS, Pilz, Schmersal, Unitronics, Animatics and Delta.

Howard Automation LLC, Cincinnati, Ohio, May 2004 to April 2012

Senior Controls Engineer

Howard Automation was my automation integration firm providing control and automation engineering services and solutions.

I did programming and control panel design/build. I did contract work part-time while working around my school and parenting duties.

Note- My wife was assigned to the Procter & Gamble London Innovation center in Egham, Surrey, UK from August 2005 till July 2008. We lived in Sunninghill, Berkshire, England during this time. I was responsible for maintaining the house and cars and primary care of our children.

OMRON Electronics Inc., Cincinnati, Ohio, 1991 to April 2004

With worldwide sales of \$6 billion and U.S.A. sales of \$400 million OEI is a leader in industrial automation control components. The OMRON Cincinnati office was a regional sales and training office. OMRON's U.S. headquarters is in Schaumburg, Illinois.

Sr. Application Engineer

Responsible for technical support on OMRON's line of 20,000+ industrial automation control products in a sales region of 4 states. I was responsible for engineering new applications, proposed systems design and fixing misapplications. I did PLC, HMI, motion control, sensing, process control, safety systems and industrial network programming and training both on-site and in my office. I developed training documentation and sales presentations. I made sales calls and presentations to customers. I maintained the office computers, NT server and LAN and telephone system.

U.S. Precision Lens (now 3M Precision Optics), Amelia, Ohio, 1990 - 1991

USPL manufactured projection TV lens systems for most TV manufacturers.

Automation Integration Technician

Responsible for the installation and electronic maintenance of PLC based manufacturing systems as well as Robots, CNC machine tools, and measurement and assembly equipment. Programmed PLCs, Hitachi robots and PID process controllers. Designed and built a custom abrasive slurry high-shear mixing and pumping transportation system. Made AutoCAD drawings of the systems I designed and modified. I repaired circuit boards for robots and CNC controls. I ran conformance tests of new equipment on-site at vendors manufacturing plants. I rebuilt Hitachi SCARA arm robot circuit boards as well as mechanical systems including harmonic drives, servomotors and encoders.

Lucas-Sumitomo Brakes (now ADVICS), Lebanon, Ohio 1988 - 1990

ADVICS manufactures disk brake calipers and ABS systems for many car manufacturers.

Maintenance Technician

Specialized in PLCs and electronic systems used in machining, assembly and processing metal parts. Since I was the first maintenance person hired during the plant construction I was heavily involved with the construction of all of the facilities and installation of the manufacturing equipment in the plant. Machined, welded and fabricated parts for repair/improvement and for new equipment.

Xetron Corp. (div. of Northrop Grumman), Springdale, Ohio 1986 - 1988

Xetron manufactures military avionics systems as well as custom industrial electronics.

Manufacturing Engineering Technician

I designed and built tools and fixtures to aid in the assembly and manufacturing of military avionics. I assembled custom test bed fixtures and built prototypes. I modified off-the-shelf electronic equipment to enable the addition of clandestine intelligence gathering electronics. I worked with the Industrial Systems Group to produce custom PLC and single board computer based test equipment for refrigeration systems. I used mills, lathes, grinders, TIG welders and sheet metal

equipment for fabrication of custom parts for these systems.

Cincinnati Electro-Systems (absorbed by GE), Loveland, Ohio 1983 - 1986 (part time and co-op)

CES produced PLC interface products and did contract manufacturing.

Assembly Technician

I assembled electronic equipment. I did soldering, wiring, screen-printing, and mechanical assembly of custom electronic equipment and PLC peripherals. I built jigs and fixtures to aid in the assembly of the systems.

Stereo-Pak Racing Engines, Madeira, Ohio 1982 - 1983

Stereo-Pak was a custom racing engine rebuild shop.

Engine Machinist

I dynamically balanced engine assemblies, disassembled engines and did production machining on special metal parts. I assisted in the assembly and disassembly of a March/Cosworth Indy race car.

Education and Interests

- ASEET '88 (Magna Cum Laude) University of Cincinnati College of Applied Science. I have completed approximately 185 credit hours of the 200 needed to receive a BSEET. My most recent classes were in Signals and Systems and Digital Control Systems (2004). We used Matlab and Simulink extensively for these classes.
- Graduate of Goshen High School, 1981.
- Factory trained on OMRON, Siemens, Beckhoff, Allen-Bradley PLC2, GE Series 6, Giddings and Lewis PIC 409, Unitronics and Horner PLCs. I have programmed these as well as A-B SLC500, Mitsubishi, Texas Instruments, Modicon, Cutler-Hammer and Westinghouse FANAL PLCs.
- Certified Machinery Safety Expert (CMSE®) TÜV Nord.
- Completed several university extra-credit embedded microcontroller projects using the Motorola 68HC11 and 68705P3 microcontrollers.
- Proficient in Microsoft Office / Windows 95/98/2000/XP/7/10/11, Red Hat, SUSE and Ubuntu Linux distributions, Lotus Notes, Corel Draw, HTML and Visio.
- Past experience with AutoCAD R12 and 2000, CNC machine tool 'G' code, 'C', BASIC, HTML and FORTRAN programming.
- I have worked with OPC-UA and MQTT clients/servers/drivers, WonderWare, Intellution, CTC's Interact and LabViews SCADA/MMI software.
- I administer a Linux based server behind a firewall/router in my home.
- FAA licensed private pilot with 350 Hours of flight time. I owned and maintained a Cessna 182 aircraft for 14 years.
- I have completed a course in GTAW/TIG welding for thin section aerospace alloys at the Alexander Technical Center in Griffin, Georgia.
- Past president of Experimental Aircraft Association Chapter 284, Waynesville, Ohio.
- I have rebuilt the house that I was raised in and resided in until 2005. This included replacing the roof trusses, every door and window, wiring, plumbing and drywall. I built the masonry porches and concrete driveway and sidewalks. My wife and I did all of the work by ourselves.

- FCC licensed General class radio amateur (WD8EEN).
 - Have completed the Wilson Learning "Counselor Sales Person" training.
 - Have completed the Fred Pryor "Delivering Outstanding Customer Service" seminar.
 - Have completed the Society of Manufacturing Engineers "Lighting and Optics for Machine Vision" training course.
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[To Frank and Maureen Howard's web page](#)

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