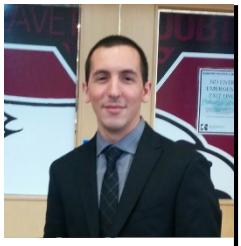

Ernest Selman

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PROFILE

Dedicated engineer, passionate about software, embedded systems and automation. 3+ years of professional experience in embedded system R&D. Additional years of professional development with MBA and PLC certification. Outstanding work ethics, self-motivated and hard worker. Excellent team player that tends to get along with everyone.

EXPERIENCE

X-Ray Service Engineer **December, 2021 – current**
Vision X, Miami, Florida, USA.

• Perform scheduled maintenance and radiation survey of X-Ray machines.
• Use root cause analysis (RCA) to troubleshoot and diagnose problems with the operations of different components such as PCB control boards, sensors, and power regulation.
• Replace damage parts and recalibrate machines to bring them back to working order.

Product Engineer **January, 2018 – August, 2021**
Nova Analytical Systems, Hamilton, ON, Canada

Non-Dispersive Infrared (NDIR) sensor platform:

• Designed and tested active filter for signal processing. Able to reach 1% accuracy.
• Developed the embedded software running on a PIC32MX microcontroller using C++. Made use of Interrupts, Timers, PWM, Output Compares, DMA, UART, SPI, and I/O.
• Selected and tested components: Switching Voltage Regulators, ADCs, DACs, Digital Potentiometers, Flash Memory, as well as USB and Bluetooth communication interfaces.
• Made regular use of multimeters, DataQ logger, oscilloscope and digital bus analyzers for testing, debugging and calibration.
• Implemented temperature PID controller to keep sensor at stable temperature.
• Used Autodesk Eagle for PCB design and routing.
• Performed SMD soldering and rework to populate and test initial prototypes.
• Worked with other programmer to develop PC base UI using C#.

Medical Portable Gas Analyzer: Medical unit used to measure integrity of gas and vacuum outlets present in operating rooms and besides ICU beds in hospitals.

• Fixed multiple electrical and software problem preventing the unit's launch to market.
• Develop mechanism for vacuum flow measurement.

Undergraduate Student **September, 2013 – April, 2017**
McMaster University. Hamilton, ON, Canada

Autonomous Billiards Player robot: Undergraduate Capstone project where my team and I built a planar robot able to recognize ball configuration, analyze best possible shot then move to the right position and take the shot.

• Won Best Capstone Project award for MacMaster University Computing and Software Department graduating class of 2017.
• Adapted 3D printer motors, power module and control board to fit the robot with adjustments to the openly available C++ source code (Marlin software) and the Arduino API.

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Sumobot Robotics Club and Competition:

• Developed a fully autonomous robot to compete in a sumobot competition..
• Designed and hand built chassis, IR sensors and motor controller. Used Arduino UNO for control.
• Won first place out of 40+ competitors in two consecutive years.
• Joined the club leadership team in 2016, taking charge of their website. Used Linux based Digital Private Server and developed a WordPress website.

Engineer Intern **June – September, 2015**
Metrican Mfg. Co. Inc. Oakville, ON, Canada

• Updated company's internal Wiki by collecting and validating information from multiple plants and repositories using MS SharePoint, HTML and CSS.
• Updated standard CAD parts to make them parametric for easier implementation by the design team. Used Siemens NX.

SKILLS

C, C++, C#, Python, Java, MATLAB, Simulink, Preempt-RT Linux, FreeRTOS, Parallel Processing and Multithreading, OpenMP, RPC, MPI, CUDA, ARM Cortex M4, PIC32 uC, Arduino, AVR uC, Git, Excel, VBA, Multisim, multimeters, oscilloscopes, uC Peripherals and Communication Protocols (Timers, Interrupts, OC, DMA, UART, SPI, I2C, CAN), Verilog, Altera Cyclone II FPGA, PLC, CAD (Eagle, Inventor, Siemens NX), Linux, Internet Protocols (HTTP, TCP, UDP, IP), HTML, CSS, MS SharePoint, SMD soldering, 3D printing.

COMPETENCE

• Project management: time management, planning and prioritization.
• Leadership and initiative.
• Analytical problem-solving skills.
• Working in a team environment and under pressure.
• Communication and presentation skills.
• Multitasking.

EDUCATION

• Bachelor of Engineering (Mechatronics), McMaster University, Hamilton, ON, Canada, 2017
• George Brown College, PLC (Rockwell) Certificate, Toronto, ON, Canada, 2018
• MSc. International Business Administration, MIU City University, Miami, Florida, USA, 2023

AWARDS

• McMaster University's Computer and Software Department best graduating class project, 2017
• McMaster Sumobot Club, Advance Competition Winner, 2016
• McMaster Sumobot Club, Beginner Competition Winner, 2015

LANGUAGES

• English (fluent)
• Spanish (fluent)

LEADERSHIP

• R&D team lead (in training) at Nova Analytical System, 2021
• McMaster Sumobot Club Media Exec. 2016.

REFERENCE

• Grant Freeman, Nova Analytical Systems General Manager, (905) [redacted]03 [redacted]@[redacted].com

• Javid Hassanzadah, Nova Analytical System Product Manager, (905) [redacted]74, [redacted]@[redacted].com

• Eliette Barrios, Ed.D. MIU Business Professor. (305) [redacted]98, [redacted]@[redacted].net