ROBERT W. SCHULER **ENGINEER**
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EDUCATION:

M.S. Electrical Engineering, the Catholic University of America. December 2004
M.S. Computer Systems Management, the University of Maryland University College December 2001
B.S., Electrical Engineering, Virginia Polytechnic Institute, and State University May 1990

EXPERIENCE SUMMARY:

Mr. Schuler has been in the professional workforce since 1986 and has applied his skills in written and verbal communication to solving problems in the office, laboratory, and field for all twenty years. Areas of expertise include: systems engineering, data modeling, data acquisition, electromagnetic interference, electromagnetic signatures, office automation (including computer aided design), process improvement, logistical support, computer hardware, networking, and software development.

PROFESSIONAL EXPERIENCE:

2004 - Present NSWCCD Code 75 – *Supervisory Engineer*. Principle investigator of Eddy Current Studies for NAVSEA PMS 500. Developed and executed experiments for exploring the effects of hull-borne Eddy Currents on overall ship's magnetic signature. Experiments involved theoretical analysis, scale measurements in the laboratory, and full-scale measurements at the San Diego Electromagnetic Roll (EMR) facility. Reviewed existing Advanced Degaussing (ADG) and Closed Loop Degaussing (CLDG) software in use aboard Mine Sweepers and DDG 76 (USS Higgins) to assist in code maintenance, bug fixing, and upgrades. Helped develop, debug, test, and deploy algorithms and software for mitigating Eddy Current effects aboard the USS Higgins. Provided a needed level of configuration management for the hardware and software controlling the ADG systems aboard USS Guardian, Patriot, Warrior, and Gladiator. Developed a data process for importing ship descriptions from NSWCCD's Advanced Surface Ship Evaluation Tool (ASSET) into a 3D electromagnetic Finite Element Modeling (FEM) tool known as Flux3D. Interface involves several commercial off the shelf (COTS) software packages (Rhino3D, AutoCAD Inventor), neutral CAD data exchange languages (IGES/STEP/DXF), and a handful of source code in C, Python, and VBA for Excel. Assisted in modeling ship's magnetic signatures using the Finite Element Method (FEM). Certified member of the Navy's Acquisition Professional Community and DAWIA Level 3 certified. Setup a collaborative web-based communication tool called Twiki and administer its server. Published several internal white papers on mathematical techniques used in magnetic signature prediction and analysis. Held several brown-bag lunches to teach different software tools including Linux, Cygwin, MatLab/Octave implementations of the Fast Fourier Transform (FFT), GNU Plot, and FFTW3.

1997 – 2004 NSWCCD Code 20- *Senior Engineer*. Developed a LAMP (Linux/Apache/MySQL/Perl) web-interface for the Total Open Systems Architecture (TOSA) Technology Management Database (TMDS). Created a similar LAMP environment for testing ISO 13584 compliant electronics parts catalogs. Maintained source code for the Advanced Surface Ship Evaluation Tool (ASSET). Was an active team member/participant in the National Shipbuilding Research Program's (NSRP's) Integrated Shipbuilding Environment Consortium (ISEC) as a STEP (ISO 10303) and PLIB (ISO 13584) expert. Developed several distributed systems models in UML (using Rational Rose) for the Leading Edge Advanced Prototyping System (LEAPS) Product Meta Model (PMM). Served as Project Leader and Editor for ISO 13584-102, Editor for ISO 13584-1, and Quality Team member for ISO TC184/SC4/WG2. Served as US Navy representative on ISO 10303-227 working group. Served as a liaison between NAVSEA and the Marine Machinery Association (MMA). Successfully completed DAWIA course Sys 301 "Systems Engineering", and "NAVSEA Contracting Officer's Representative (COR) Training". Authored Chapter 11, "Modeling Shipboard Piping" of ISBN 972-689-157-4, Soares, et. al. Application of Information Technologies to the Maritime Industries, copyright 1999. Co-authored and presented "The Application of ISO 13584 (Parts Libraries) to Increase Enterprise Communication of Product Model Data" for ASNE's Second Modeling, Simulation and Virtual Prototyping conference. Coauthored "Application of Human Machine Interfaces to Simplify Computer Simulation Applications" which was presented to the 21st Century Combatant Technology ASNE Symposium.

1991 - 1997 M. Rosenblatt & Son, Inc. - *Project Engineer*. Directed a team of engineers and programmers in developing Human Machine Interface (HMI) technology to enable NAVSEA engineers to develop and test piping system interfaces. Effort included development of hardware to interface existing digital tank level indicators with IBM PC compatible computers via RS-232-C, the design of microcontrolled Analog to Digital converters, the design and test of Graphical User Interface (GUI), and the development of TCP/IP communication routines for interfacing with real-time simulation tools. Researched the application of circuit layout algorithms for use in automating the translation of 3D piping system models into 2D piping schematics. Supported NSWC in directing International Standards Organization (ISO) development of parts library standards (ISO 13584). Represented the U.S. at the June 1997 ISO meeting in San Diego California, and the March 1997 ISO meeting in Chester England. Designed a data schema and implemented a database to support the "Uniform National Discharge Standards" (UNDS) effort. Performed industry review of ISO 10303 AP 217 (the Ship STEP Piping AP). Developed software and procedures for extracting a Flow Analysis And Simulation Technique (FAAST3) input file from a 3D CAD2 I/ROUTE piping model. This effort required applying advanced computer science concepts to existing data formats, and applying advanced engineering techniques to existing computer models to ensure that translations were correct. Several flow network problems were solved by hand and by computer as part of the programming effort. Adapted FAAST interface program to incorporate an interface to the IGES 3D Piping Application Protocol. Attended the October 1996 IPO/ISO meeting in Toronto Canada. Attended the April 1996 IPO meeting in Norfolk, VA. Attended the January 1995 IPO (IGES/PDES Organization) meeting in Newport Beach, California. Taught a series of 25 lunch-time courses to fellow employees covering a wide range of office computer skills and background. Attended the following CAD2 courses: EMS basics, I/ROUTE basics, PPL Programming, INFORMIX, I/ROUTE Libraries. Attended the January 1994 IPO (IGES/PDES Organization) meeting in Mesa, Arizona. Wrote software for Parsing, editing, and storing IGES 3D Piping Applications Protocol files. Convert data files from outside sources into formats used by in-house software packages including IGES, ASCII data bases, and numerical data. Wrote tracking program in dBase IV runtime language, for CVN 76 and LHD 5 documents. Developed plan for connecting MR&S network to NAVSEA network. Developed fuel testing plan for JP-5 on DDG 51. Reviewed ShipAlt program for USCG. Converted and compiled FORTRAN 77 programs from VAX to PC for USCG. Adapted Branch 05 login program to work with new accounting system. Wrote program in C to fix a FAAST input file from a VAX to work with MR&S FNA (flow network analysis) program. Design install and maintain 1ObaseT Ethernet computer network using LANtastic 4.1 software. Monitor PC use and computer supplies for 25 IBM-PC computers in the Auxiliary Systems Division. Troubleshoot and support hardware and software for 90 facility computers. Write programs in C, C++, FORTRAN, assembler, AutoLisp, WordPerfect macros/merge, dBase, and Lotus 1-2-3 to support engineering contract work.

1990 - 1991 General Electric Government Services - *Associate Engineer*. Made measurements and analyzed electromagnetic fields in a shipboard environment to determine personnel safety (RADHAZ) from HF, SPS, SPQ, SPY, SLQ, and SATCOM antennas in accordance with NAVSEA OP3565. Also used analysis and computation to determine electromagnetic compatibility and electromagnetic susceptibility conformance of ShipAlts to MIL-STD 461 and MIL-STD 1310. Attended an IEEE meeting to learn about EM-technology and participated in National Association of Radio and Telecommunications Engineers (NARTE) certification training.

Designed, installed and maintained a printer-sharing-network. Wrote programs in AutoLisp, C, and WordPerfect Merge for processing data and analyzing problems.

1986, 1987, and 1989 (Summers) SIXDB Inc., - *PC System Manager/Programmer/Draftsman/Technical Writer*. Used Ventura Publisher, WordPerfect, and Generic CAD to transform rough notes and sketches into finished technical reports. Installed and maintained company PC computer system. Wrote programs in FORTRAN 77.

1988 (Summer) Metro Electrical Contractors Inc. - Electricians Apprentice. Worked as an Electricians Apprentice on a commercial job site. Installed lighting, outlet wiring and wiring to a two phase fan.

ADDITIONAL EXPERIENCE:

Data acquisition systems, LINUX server administration, PostGreSQL, MySQL, Oracle, PERL, VBA, C, FORTRAN, C++, Java, TCP/IP and UDP networking, RS-232, Circuit Layout/Assembly, Trouble Shooting hardware, software and operator procedures, use of Spectrum Analyzer and Oscilloscope, Report Writing, Electromagnetic Compatibility Analysis, Electromagnetic Radiation Hazards to Personnel Analysis and Measurement. Experience with Microsoft Windows, Microsoft Office, DOS, UNIX, LINUX, MatLab, Octave, LabView, CAD2 (I/EMS, I/VDS, INFORMIX, RIS, I/ROUTE, PPL, CPIGES) AutoLisp, Machine Language, LaTeX, WordPerfect, AutoCAD, Auto Sketch, AutoCAD Light, Generic CAD, Rhino3D, EXPRESS, EXPRESS-G, Rational Rose, UML, SGML, XML, and HTML.

MEMBERSHIP:

ΦΚΦ Phi Kappa Phi honor society
ASNE American Society of Naval Engineers
IEEE Institute of Electrical and Electronics Engineers
Bujinkan Dojo Martial Arts
Sigma Alpha Fraternity - Offices Held: President, House Manager, Treasurer, Secretary, Pledge Master
Boy Scouts of America - Offices Held: Assistant Scout Master, Senior Patrol Leader
Awards: Eagle Scout, June 1986

SECURITY CLEARANCE: Secret

REFERENCES: Available upon request.