Michael C. Robbeloth, M.B.A., Ph.D.

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Objective

I am seeking principal or senior-level engineering positions or mid-level management positions that utilize my strong analytical and logical thinking skills in the areas of general software development/engineering, embedded software engineering, or advanced industry R&D work.

Education

Wright State University, Dayton, OH *May 2019*
Doctorate of Philosophy, Computer Science
GPA 3.75/4.0
Dissertation: Recognition of Incomplete Objects based on Synthesis of Views Using a Geometric Based Local-Global Graphs

http://rave.ohiolink.edu/etdc/view?acc_num=wright1557509373174391

University of Dayton, Dayton, OH *May 2011*
Master of Business Administration, Finance
GPA: 3.91/4.0

Bowling Green State University, Bowling Green, OH *May 2002*
Master of Science, Computer Science
GPA: 3.9/4.0

Wilmington College, Wilmington, Ohio *May 2000*
Bachelor of Science, Computer Science; Second Major Mathematics
GPA: 3.94/4.0, Graduated Summa Cum Laude

Relevant Work Experience

Robbeloth Consulting Services May 2023 – Present
DEVOPS CONSULTANT, CLIENT PDI COMMUNICATION SYSTEMS, INC. (AS NEEDED)

- Provided design and implementation work on Docker and LXC/LXD containers for an Ubuntu 14.04 build server creating customized Android Open Source Project (AOSP) builds for different single board computers (SBCs).

Mount Vernon Nazarene University May 2017 – Present
ASSOCIATE PROFESSOR OF COMPUTER SCIENCE

- Taught a variety of undergraduate Computer Science courses to freshmen (1st-year students) to seniors (4th+ year students) that included: Database Management Systems, Introductory/Advanced Computer Networking courses, Practicum in Networking, Mobile Application Development, Software and Systems Engineering, Computer and Information Security, CS II (Java), Computer Organization and Architecture, Operating Systems, Technology & Society (CS Ethics), etc.
- Advised undergraduate Computer Science (CS) and Computer Systems and Networking Engineering Students (CSNE) in putting together their program(s) of study
- Rebuilt server systems in the department's data center with VMWare ESXi hypervisors on systems like Dell PowerEdge and Supermicro units to facilitate academic research and senior practicums within the CS Department using various virtual machines.

PDi Communication Systems, Inc. *June 2015 – May 2017*
Supervisor Embedded Software Engineering

- Supervising two other embedded software engineers in the development of the PDi-TAB/TAB2/TAB module. This includes the development of yearly work plans and semi-annual performance evaluations.

- ❖ Responsible for developing the schedule and assigning work tasks for migration of the TAB product line to newer revisions of the AOSP codebase. Presently, work has begun on migration to the AOSP 5.0 codebase for the development of an integrated TV/Android platform called the TAB3.
- ❖ Responsible for providing management presence at technical meetings with vendors, distributors, parners, and key customers.
- ❖ Responsible for overseeing the mitigation of bug reports and feature requests entered into the Bugzilla system as it relate to the TAB product line and PDi Portal

PDi Communication Systems, Inc. *May 2012 – May 2017*

Embedded Software Engineer

- ❖ Assisting in the development of the next-generation healthcare infomedia device called the PDi-TAB/TAB2/TAB module (R). Specifically, I have worked on integrating, modifying, and enhancing the bootloader (U-Boot), kernel (Linux derivative), framework, system, and external applications in the Android Open Source Project (AOSP) 4.0 and 4.3 on a Freescale-based i.MX6 ARM processor board to meet the unique needs of PDi's market. This board has been integrated into 14" and 19" televisions with a capacitive touchscreen and mechanical arm assembly attachment along with a modular component for larger sized wall mounted sets. The source is partially open and can be found at: https://github.com/PDi-Communication-Systems-Inc (the remainder is in an internal SVN repository). My username is mrobbeloth-pdi. My work touches on new or existing code bases most often in Java, to a lesser extent in C++ and C codebases, and on rare occasions Python, BASH, and ARM assembly.
- ❖ Assisted in the development of the PDi Portal, which consists of a portal management component and a healthcare store. My responsibilities here involved work with the integration of a device administrator app into the system image and necessary framework adjustments to handle requests from the server side portal.
- ❖ Required to debug complex problems, which at times required the use of an ARM DS-5 JTAG debugger, reading of schematics, etc.
- ❖ Developed a corporate specification for developing Android apps. As part of this effort, I created an Android platform application that adheres to these standards. The app and standard referenced each other to create a cohesive training process for new Android developers at PDi.
- ❖ Enhanced a VB.Net test program that exercises the company's proprietary protocol for controlling healthcare grade televisions (a UART based standard)
- ❖ Developed operating system images for use in production efforts and for delivery to end customers. Specifically, I crafted a Windows Pre-Installation (WinPE) 3.0 environment that contained software for the burn-in of healthcare-grade televisions that shipped with an internal computer component.
- ❖ Rebuilt our in-house Windows Embedded Standard (WES) image (roughly equivalent to Windows XP SP3) shipping on one of our mechanical arm assembly televisions that has a resistive touchscreen capability to greatly enhance the user experience.

Data Science Automation *February 2009 – May 2012*

Senior Consultant and Computer Scientist, Client: W.P.A.F.B. AFRL/RBSD

(Now AFRL/RQSE – Lightweight & Efficient Structures Branch)

- ❖ Assist scientists and engineers (S&E) at Wright Patterson Air Force Base's (W.P.A.F.B.) Design and Analysis Methods Branch (AFRL/RBSD), Structures Division with the development of a multi-fidelity and multi-disciplinary integrated framework for creating computational models of Flapping-Wing Micro Air Vehicles (FMWAVs). My responsibilities include serving as the department's Computer Scientist and performing the following duties:
  - ○ Designing and implementing a Swing oriented, Java-based Graphical User Interface (GUI) program called, M^{3}CT, using a Model-View-Controller (MVC) architecture that utilizes a variety of distributed server programs through the Jini (Apache River) and Service-Oriented Computing Environment (SORCER) frameworks to better facilitate S&E's attempts to develop computational models of FMWAVs without having to programmatically code analytical, parametric, or optimization studies on their own. The requirements, architecture, and design have been documented using Unified Modeling Language (UML) and utilize design patterns where appropriate to produce a highly cohesive and loosely coupled system. The implementation was done using the Eclipse Integrated Development Environment (IDE).

- Advising and assisting research engineers in the design and implementation of new server programs utilizing the Jini and SORCER frameworks that wrap their native research codes written in Fortran, C/C++, or MATLAB into a set of Java compatible classes using Java Native Access (JNA) technologies. Created tutorials to reinforce advising and assisting function.
- Creating and documenting a set of software development standards along with formalizing the use of a set of development tools to be utilized by all S&E.

Valco Melton (Valco Cincinnati Inc.) *April 2008 – December 2008*

Software Engineer

- Principal engineer on the development of a new color detection sensor system to read RGB product codes on folding carton products using an embedded system consisting of an Altera II FPGA, 68000 (68K) CPU, and an Analog Devices A/D 9822 chip. My responsibilities include:
  - Validating transferred technologies from legacy color detection systems into this product using ModelSim and bench testing using SignalTap software logic analyzer and Tektronix scopes.
  - Modifying and enhancing board-level design files and Verilog code modules using Altera Quartus to support the new system while also adding new functionality.
  - Designing and implementing an inspection monitoring system on the 68000 CPU using Microtec's C++ compiler to determine if samples going through an inspection system are within user-specified tolerances when compared to a learned pattern and the nature of any failures.
  - Designing and Implementing functionality that will use a CAN Bus interface to communicate with a GUI application (Valco OT-120 for example) and other components of the VCX system.
  - Designing and implementing a GUI based color analysis simulator using C++ for Microsoft Windows systems to aid in the design of color analysis algorithms
  - Supervising the work of engineering technicians with development or testing activities.

Eastman Kodak Company *August 2002 – April 2008*

System Software Engineer (Graphic Communication Group, Inkjet Printing Solutions)

- Primarily responsible for assisting in the maintenance and development of new functionality for the company's data system software that drives our company's high-speed, variable-data, industrial inkjet printers. The data system software, written in C and assembler to run on VxWorks, Windows XP Professional 32 & 64 bit, is a multi-threaded, message-passing system that uses rasterized image processing (e.g., ripping) algorithms to convert data files in the IJPDS format into rasterized (bitmap) images for transmission onto printer output daughterboards (POBs) on embedded processor boards or single PCI boards in our PC data systems. My responsibilities include:
  - Implementing new functionality per developed specification by our most senior software developers along with my input. Occassionally, perform design and implementation activities on smaller subunits myself.
  - Testing new functionality along with ensuring no new regression issues have developed in lab settings and by operating printer transports for live testing. Requires writing test plans.
  - Debugging failures in our software that are beyond the ability of our field engineers.
  - Developing installation and training procedures along with installation software using Wix.
  - Developing, implementing, and maintaining cost reduction utilities to support our data system software, which have included a Wyse emulation console, written in Java, with Serial to TCP/IP duplication, and HASP HL programming software written in C.
  - Evaluating (benchmarking) new hardware platforms or peripherals to drive the next generation of our data system software. Sometimes, this involves the creation of custom utilities to process data files in novel ways for testing with new hardware or peripherals.
  - Supervising the work of technicians when they are assisting me with testing tasks
  - Demonstrating new functionality to essential personnel when requested by management.
  - Assisting in the development of a new method of modifying data streams to print more quickly on inkjet systems while reducing bandwidth and storage demands on the integrated system performing the rasterization. See patent application: 20050248597.

Other Publications

- Robbeloth, M., & Bourbakis, N. (June 2015). An LG Graph Monitoring Scheme for Representing Incomplete Objects, IEEE National Aerospace & Electronics Conference & Ohio Innovation Summit (NAECON-OIS) DOI: 10.1109/NAECON.2015.7443078
- Robbeloth, M. & Bourbakis N., Recognizing Objects from their Incomplete Representation: A Survey, Int. IEEE Conference on IISA, Chalkidiki, Greece, July 2016 10.1109/IISA.2016.7785370

Organizations

- Association of Computing Machinery (ACM) Professional Member
- IEEE Computer Society Student Member
- Phillipsburg Missionary Church Member