J. Whitaker McRae

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Summary

I am a lifelong technology enthusiast who has worked in many areas of embedded software development, now seeking new challenges in the defense and aerospace market. Results driven and self taught in many aspects, I excel at programming real-time software from the firmware up to the application level, with a special love for C++.

Education / Qualifications

Bachelor of Science in Aerospace Engineering, 2009
Bachelor of Science in Mechanical Engineering, 2009
University of Florida, Gainesville, Florida
Minor: Business Administration
Honors: UF Honor's Program
National Society of Collegiate Scholars, 2003
Golden Key International Honor Society, 2004

International Baccalaureate Diploma, 2003
Stanton College Preparatory, Jacksonville, Florida
Honors: National Honor Society

Technical Expertise

Development

- Real-time development in C/C++ (Visual Studio, Eclipse), and using UML modeling (Rational Rhapsody)
- Android application and database development (Eclipse + ADT)
- General GUI and tool development in Java (Eclipse), Microsoft Office VBA applications
- General database programming using MySQL, Microsoft Access via ODBC
- General web-based development in HTML (XHTML), using Javascript, CSS, and PHP
- Familiar with IBM Rational DOORS, ClearCase, Git, Borland Starteam, ClearQuest

Military Systems

- Communication Management Unit (CMU) simulation, including HF, VHF, and SATCOM data links
- Hawklink synthetic environment (RTS terminal) on MH-60R Romeo platform
- Heads-up Display (HUD) programming and tracking algorithms
- HF, VHF, and UHF base radio navigation (VOR, ILS, DME, TACAN, and similar)
- General Flight Management System (FMS) DAFIF and Jeppesen database flight planning
- General cockpit avionics communicating via ARINC 429 and MIL-STD-1553 buses

Experience

SENIOR PROJECT ENGINEER, 2012-present
Performance Software, Clearwater, Florida
Reference: Michael Johnson, Site Lead. (*contact info upon request*)

- Developed Patient UI for Sonosite (FujiFilm) ultrasound tablet, running on top of AOSP framework
  - Wrote requirements from initial customer wire frames, scoped work effort and man hours
  - Coded/Integrated Patient UI application into existing Scan UI framework
  - Assisted with Content Provider effort to interface with major medical databases
- Subsystem lead for Collimator firmware development on Revolution CT Product line, GE Healthcare
  - Wrote requirements, scoped work efforts and man hours, developed test plan, led team to execute plan
  - Coded/Integrated VxWorks driver updates for modified FPGA register map, new register functionality
  - Coded/Integrated VxWorks application updates using Rational Rhapsody model driven development
  - Led verification effort using Python script and test framework developed alongside firmware updates

- Developed Python test script sets for Axial Rotation on Revolution CT Product line, GE Healthcare
  - Wrote core test libraries for axial rotation firmware running on a VxWorks Gantry Control Board
  - Scripted ~40 individual tests to be used in 510(k) premarket verification

AVIONICS & DATA LINK ENGINEER, 2009-2012
CAE USA Military Simulation and Training, Tampa, Florida
Reference: Bahram Abgoon, Avionics Group Lead. (813) 887-1605

- Developed Hawklink Radio Terminal Set to be used on all Navy MH-60R Romeo mission simulators
  - Coded/Integrated Air-side RTS module to link with AOP (Mission Computer) via MIL-STD-1553
  - Coded/Integrated Ship-side RTS module to simulate Momship data link Command / Control
  - Fully functional link with real deployed Navy fleet (acting as Momship) via military HLA Network
  - Support for full message set and capabilities
- Developed Communications Management Unit (ATC data link) to be used on all capable mission simulators
  - Coded/Integrated Williamsburg Protocol + ARINC 619 + ARINC 702 link to Flight Mission Computer
  - Coded/Integrated ARINC 739 link to MCDU, ARINC 740 link to Cockpit Printer for ACARS control
  - Coded/Integrated ARINC 750 link to VHF Data Radio, ARINC 753 link to HF Data Radio
  - Support for near full ACARS, FANS 1/A, AFN, and CPDLC functionality via simulated ground station
- Spearheaded development of AT-6 Flight Mission Computer and Link 16 synthetic environment (SADL)
  - Coded/Integrated Flight Mission Computer DAFIF database control and flight planning capability
  - Sync with CGF synthetic environment for Link 16 entities, Command / Control of Link 16 network data
- Helped develop and maintain CAE NavServer (real-time database + server/client) for global radio navaids
  - Import/control of Jeppesen/DAFIF worldwide radio data as Microsoft Access database via ODBC
  - Connection to host client for on demand Nav Radio tuning, IOS client for command/control/display
  - Connection to database syncing client for multi-device mission networking

SUMMER INTERN, 2007, 2008
CAE USA Military Simulation and Training, Tampa, Florida
Reference: Mark Thatcher, Systems Manager. (813) 885-7481

- Digitized and analyzed graphical flight characteristics for C-130E and C-130H aircraft
- Helped to design and implement company-wide Microsoft Sharepoint Intranet Site