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Leonardo Baloa

Senior Software Engineer

PROFILE

Passionate about developing and leading software engineering projects with 17 years of experience in the medical industry and 4 years in the entertainment industry developing in embedded systems

SKILLS

Agile, Engineering
Project Management
Clinical Expertise
FDA Compliance
Business Analysis

Software Development
Embedded Systems
Problem Solving
Process Optimizer
Arm-based processor, lately Atmel SAM 9263 and Freescale MCF52259

C/C++, C#, Objective-C
QT/ qml, Matlab, Java
Android, CSS, jQuery, HTML, docker, git, hg

Python, javascript, bash
Network and IP stack
Power & Control System
Digital Signal Analysis
Multivariable Analysis
Pattern and algorithms

EMPLOYMENT HISTORY

Sonendo | [Sr. Software Engineer](#), Irvine, CA, 2020-Present

- Defined UI requirements and software for endodontist cleaning console
- Developed UI app using qml (javascript) / Qt /C++. Created more than 20+ menus and 10+ major features (Wifi connectivity, animation, etc)
- Tuned Linux OS features in the yocto development system
- Conducted V&V testing and completed 3 formal software releases of products to be used in limited releases
- Followed Sonendo's quality system process. Improved software requirements, conducted software code reviews, followed quality system process to release software
- Tools used git, svn, VMware, yocto, Linux, Qt creator, qml, C++, Qt Creator
- Team coordinator of system integration activities
- Enrolled in UCI UI/UX Bootcamp to improve the art of designing User Interfaces (UI) and conducting User Research (UX)

Diality | [Sr. Software Engineer](#), Irvine, CA, 2019-2020

- Defined required, developed, and designed dialysate generator system on TI RM46852 microcontroller. This is a device that is interfaced via CAN. Development is done on a barebone development environment in C
- Developed utilities for CAN communication in python, and differential equation simulation to test some modules
- Developed control techniques for an innovative home hemodialysis system.
- Contributor of the hazard analysis and FMEA. Author of software requirements, software design documents. Author of unit test and integration test as required per FDA guidelines.
- Tools used git, vector cast, python, Linux, C compilers, and C++ compilers
- Team contributor in system design activities. Under Agile system

BIT-Group | [Sr. Software Engineer \(Team Lead\)](#), Irvine, CA, 2018-2019

- Developed (complete development cycle) mixing feature in an embedded system for an allergy robotic diagnostic system within scheduled time under a scrum system. The system is comprised of Atmel 9263 and Freescale MCF2259 microcontroller
- Lead team (promoted after one month of hiring) of 2 juniors and 2 senior software engineers (contractors) in the completion of features and bug correction in a revised version of the allergy robotic diagnostic system

EDUCATION

2006, MBA, CMU
2000, Ph.D. EE, U of Pitt
1995, MSSE, USB
1992, BSEE, USB

- Developed features and applications in python and C/C++ using FreeRTOS. Evaluated newer core platform (Ethercat) to integrate an embedded system
- Resolved numerous bug complaints for the allergy diagnostic device
- Developed UI features on several instrumentations app using C++/Q and qml/javascript
- Developed, coordinated and architected software for the development of application for manufacturing and field service

PATENTS

More than 30 US and
European patents

AT&T / Red Embedded | [Sr. Software Engineer](#), LA, 2014-2018

- Integrated and developed software for streaming video using open source code and proprietary code in an Agile Environment
- Resolved complex software issues in C/C++/Java/Android/Python and Embedded Linux environment. Troubleshooting and investigating hardcore issues
- Developed Android applications and API services for New Generation Server (Box) and ATT web services system to stream content (videos and pictures) to a series of clients. Focus is on cloud development and caption services

PUBLICATIONS

9 Total
5 Articles
3 Conference papers
2 Citing conference
papers
1 Citing article paper

Breathe Technologies | [Director of R&D](#), Irvine, 2011-2014

- Led and built engineering team (mechanical, electrical and software) for the design of a CPAP system used in clinical trials, and FDA 510(k) submission
- Defined CPAP system and software application requirements
- Defined and managed clinical strategy used in FDA submission. Defined intellectual portofolio for CPAP and bi-level products
- Designed and coded communication with PC and algorithm modules for CPAP and ventilator products that used STM32 arm core family

Philips Respironics | [Software Manager](#), Monroeville-PA, 2009-2011

- Successfully completed more than 5 clinical engineering/ feasibility trials bringing concept products to production line ready
- Defined UIs software requirement by conducting user research on early mock and UI prototypes. Developed ventilator UI software for the CPAP system
- Created intellectual property and developed it in C/C++ using threadX in STM32 arm microprocessor

Philips Respironics | [Project Engineer](#), Monroeville-PA, 2006-2009

- Managed, developed, V&V software, and supervised clinical activities for the release of algorithms and UIs in ventilator-like systems
- Built an engineering R&D team of 7+ engineers (biomedical, electrical, software and mechanical)
- Developed, V&V and released embedded software in C for pulse Ox and ventilation algorithm for 2 products (Auto SV and Smart Modem)