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Sogeti USA Profile

Joseph Barkate
Associate Consultant
Testing Services

Mr. Barkate is a recent graduate from Baylor University's Electrical and Computer Engineering program with a passion for technology. Joseph has experience building and designing and testing algorithms for autonomous power amplifier design. Mr. Barkate's work detailing these algorithms can be found in conference papers available at IEEE.org. Joseph also has experience creating automation tools used to data mine and data condition circuit simulations used to create unique multidimensional mesh plots.

Mr. Barkate has experience instructing and leading multiple senior level RF/Microwave circuits design labs. In these labs students were instructed to design, simulate, fabricate and test multiple RF components including Mixers, LNAs and PAs. These experiences and background provide Mr. Barkate with a unique understanding of both hardware and software concepts used in system design. This comprehensive knowledge of computer systems provides a basis for practical and efficient software design solutions.

Education

- M.S. in Electrical and Computer Engineering, Baylor University, 2016
- B.S. in Electrical and Computer Engineering, Baylor University, 2014
  - Minor in Mathematics

Skills

Languages/ Development Tools	Angular 4, Typescript, Javascript, HTML, CSS, Ruby, MATLAB, Python, Java, Selenium, WebDriver, C#, C/C++, MySQL, LABView
Enterprise Solutions	BDD, ATDD
Architecture	Angular 4, NodeJS, OOP, SDLC, Agile
Project Management & Design	Experienced with GIT CLI, SourceTree and SVN on personal as well as team projects

Certifications

- Thesis Title: Algorithms for Fast Power Amplifier Load Impedance and Input Power Optimization
- Eta Kappa Nu (HKN) Electrical Engineering Honors

Professional Experience

Companies Worked For	From - To	Roles
Charles Schwab	May 2017 – Nov 2017	Associate Developer
Baylor University	August 2013 – May 2016	Graduate Research Assistant
Fallas Automation	May 2013 – August 2013	Controls Engineer

Professional Experience Details

Charles Schwab **May 2017 to November 2017**

Project Description

As an associate developer on the retail web technologies team at Charles Schwab Joseph worked on the Angular application development of the big-web customer facing 'My Profile' page. Joseph developed in an Agile BDD environment involving two week sprints, daily standups and communication with project owners and usability testing with customers. While working as a developer, Joe was tasked with assuming authority over and closing stories which included developing reusable components, directives, routes, services and unit tests in the Angular application. Several of Joseph's components and directives were contributed back to Charles Schwab's core reusable code base with included documentation to be used by other RWT teams. In the Agile environment Joseph developed unit tests using the framework Jasmin and Karma to accomplish a 90% unit test code coverage. Joseph has also exhibited leadership and presentation skills through leading several standups and retrospective, grooming and planning sessions. Mr. Barkate met and exceeded the expectations of his product manager by pushing to pre-production and production environments on schedule to deliver the software product requirements encompassed in the original contract.

Accomplishments

- Contributed to Charles Schwab core re-usable code base.
- Led daily stand-ups and retrospective, grooming and planning sessions in an Agile environment.
- Developed important core security service and directives for financial safety in an Angular application.
- Developed an efficient code base that could handle performance testing of over 100,000 users.

Project Technologies/ Products

Angular 4, Typescript, Javascript, CSS, HTML, Jasmin, Karma, Ruby, Gherkins

Baylor University **August 2013 to May 2016**

Project Description

Baylor's Wireless and Microwave Communication Systems (WMCS) lab wanted a way to view three power amplifier design characteristics at the same time. Mr. Barkate created a software tool to autonomously data mine circuit simulations in order

to create this new three-dimensional realization of the Smith Chart. With the use of the new graphing tool, the WMCS team was able to write and present multiple unique plots of difference power amplifier characteristics. Mr. Barkate then created a software communication tool to communicate between Advance Design Systems' netlist files and MATLAB. This allowed for optimization of power amplifier circuitry in real time. Several research papers were then published using this automation technique and the WMCS team utilizes this tool for all current simulations.

Accomplishments

- Led team of graduate and undergraduate research assistants.
- Developed new tool for multi-dimensional graphical representation of circuit characteristics.
- Developed tool for autonomous optimization of power amplifier characteristics.
- Data-mined circuit configurations for visual representation.

Project Technologies/ Products

MATLAB, Advanced Design Simulation (ADS), C++

Fallas Automation **May 2013 to August 2013**

Project Description

Fallas Automation a robotics case packaging company based out of Waco, Texas just released a new case packaging robot that could handle a wider variety of packages. Mr. Barkate was responsible for drafting electrical panels of robotics control systems using CAD drafting software and embedded system design knowledge. Once the packaging robots were constructed Mr. Barkate would begin the debugging process using PLC gate logic, HMI, and a servo control language. Each Packaging robots required different software development strategies for different size products and packaging rates. Mr. Barkate oversaw communicating with assembly technicians to debug the multitude of control systems, to ensure the packaging robot met design specifications in the allotted time. Joseph was also tasked with remote debugging and communication with costumers in event of bugs once assembled at the client site.

Accomplishments

- Led small team of assembly technicians.
- Met a multitude of design specifications within design deadline.
- Drafted control panels for $100,000+ worth of hardware for robotic control.
- Debugged large multi-language control systems.

Project Technologies/ Products

AutoCAD, PLC, HMI, C++

Professional Affiliations

- www.IEEE.org

Publications

- "Fast, Simultaneous Optimization of Power Amplifier Input Power and Load Impedance for Power-Added Efficiency and Adjacent-Channel Power Ratio Using the Power Smith Tube," Barkate, Joseph, M. Fellows, C. Baylis, L.Cohen, and R.J. Marks II , IEEE Transactions on Aerospace and Electronics Systems, October.
- "Comparison of multidimensional circuit optimization techniques for real-time transmitter use", J. Barkate, A. Tsatsoulas, C. Baylis, L. Cohen and R. J. Marks, 2016 Texas Symposium on Wireless and Microwave Circuits and Systems (WMCS), Waco, TX, 2016, pp. 1-7.
- "Fast, momentum-aided optimization of transmitter amplifier load impedance and input power for cognitive radio using the power smith tube," J. Barkate et al., 2016 IEEE Radio and Wireless Symposium (RWS), Austin, TX, 2016, pp. 54-56.
- "The Power Smith Tube: Joint optimization of power amplifier input power and load impedance for power-added efficiency and adjacent-channel power ratio," J. Barkate, M. Fellows, J. Barlow, C. Baylis and R. J. Marks, *2015 IEEE 16th Annual Wireless and Microwave Technology Conference (WAMICON)*, Cocoa Beach, FL, 2015, pp. 1-4.