Nagarjun Chakilam

Signal Processing Engineer

24 Lake View Gardens, Apt 601
Natick, MA 01760 USA
chnarjun@gmail.com
+1 (215) 200-4755

Summary

- 4+ years experience in signal processing software industry using MATLAB and Simulink.
- 3+ years experience in testing streaming / real-time signal and audio processing algorithms applying object oriented principles.
- Experience in developing tools to automate processes and save engineers time.
- Experience using version control systems like Git and Perforce.
- Strong fundamentals in digital signal processing concepts and advanced MATLAB programming.
- Excellent time management skills and a well-versed team player.
- Passionate about signal processing applications.
- Hobbies include iOS app development and Raspberry Pi programming using Swift and Python respectively.

Experience

The MathWorks, Inc. — Natick, MA

Digital Signal Processing Engineer in Test ***DSP System Toolbox ™*** — *Feb '12 – Present*

- Developed audio and signal processing algorithms using MATLAB object oriented principles as baseline to test the functionality of the shipping components.
- Developed automated test suites for complex software audio and signal processing components like dynamic range control algorithms, parametric equalizer & notch-peak filters, basic filters like low pass, high pass, differentiator filters using MATLAB and Simulink.
- Tested optimized C code generation from several signal processing algorithms including FIR and biquad filters for ARM Cortex-A (using NE10 library) and ARM Cortex-M (using CMSIS library) processors.
- Gathered requirements, presented software designs, developed and tested easy to use tools and saved engineers time in developing a feature and writing automated tests in MATLAB.
- Mentored other engineers in the team to test audio related features.
- Replaced legacy test cases with more efficient test cases without losing the code coverage and functional coverage which reduced the automated test run time by significant amount.

Signal Processing Engineer Intern ***Phased Array System Toolbox ™*** *Aug '11 – Jan '12*

- Documented and presented software designs for review.
- Developed functions in MATLAB using radar signal processing System objects.
- Addressed several software related bugs and enhancements.
- Updated the product code base to a new infrastructure that makes it easier to localize the software in different languages.

Villanova University — Villanova, PA

Research Assistant *Dec '09 – July '11*

- Developed watermarking algorithm in MATLAB to detect sonar signals in underwater acoustic channels.
- Estimated underwater channel using least squares estimation algorithm in MATLAB.
- Tested the watermarking algorithm in the estimated underwater channel and examined ROC curves.
- Detected the watermarked sonar signal in the actual sea trials at the South Florida Ocean Measurement Facility.

Education

Villanova University — Villanova, PA

Masters in Electrical Engineering ***GPA: 3.97/4.0*** *2009 – 2011*

Relevant coursework – Digital Signal Processing, Statistical Signal Processing, Radar Systems and Detection & Estimation.

Jawaharlal Nehru Technological University — Hyderabad, India

Bachelors in Electronics & Communications Engineering ***GPA: 3.92/4.0*** *2005 – 2009*

Relevant coursework – Signals & Systems, Digital Signal Processing, Analog Communications, Digital Communications, Linear Algebra, Matrix Theory, Probability Theory and Stochastic Processes.

Skills

Programming languages: MATLAB, C, C++, Python, Swift, JAVA.

Operating systems: MAC, UNIX, WINDOWS.

Tools: Simulink, Perforce, Git, LaTeX, Xcode.

Publications

Mobasseri, B.G.; Lynch R.S.; Chakilam, N.; "Watermarking sonar waveforms using knowledge of channel coherence " *OCEANS 2010*, pp 1-8, 20-23 Sept. 2010.

Mobasseri, B.G.; Chakilam, N.; Lynch R.S.; "Sonar Watermark Embedding and Detection: A Sea Trial Report " *2012 SPIE Defense, Security and Sensing, Baltimore, MD.*