Nagarjun Chakilam

Audio & DSP Quality Engineer

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Summary

- 6+ years experience in signal processing software industry using MATLAB and Simulink.
- 5+ 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 communications skills, time management skills and a well-versed team player.
- Passionate about signal processing applications especially in audio.
- Hobbies include iOS app development, audio plugin development for DAWs and Raspberry Pi programming using Swift, C++ and Python respectively.

Experience

The MathWorks, Inc. — Natick, MA

Audio & DSP Quality Engineer ***Audio System Toolbox ™*** — *Feb '12 – Present*

- Developed audio and signal processing algorithms using MATLAB object oriented principles as baseline to lock down the functionality of the shipping components.
- Developed automated test suites for complex software audio and signal processing components using MATLAB and Simulink.
- Took initiative in enhancing team wide processes that increased our team's productivity in multiple stages of the software development cycle.
- 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 several engineers and interns in the team to test audio processing algorithms and other audio related features in the product.
- Actively participated in multiple book clubs and proactively searched for opportunities to implement what I learned.

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

- Documented and presented software designs for review.
- Developed functions for the Phased Array System Toolbox product in MATLAB.
- Addressed several software related bugs and enhancements.
- Updated the product code base to a new infrastructure that makes it easier to localize and internationalize 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.*