Michael Jorgen Olsen

761 San Carlos Avenue, Mountain View, CA 94043 | (916) 293-2421 | intuit14@gmail.com

Education

Master of Arts in Music, Science and Technology
Degree Conferred: June 2017
Center for Computer Research in Music and Acoustics, Stanford University, Stanford, CA, USA
- Relevant Coursework: Intro to Digital Audio Signal Processing: Spectrum Analysis, Digital Filters, Audio Applications of the FFT, Signal Processing Techniques for Digital Audio Effects, Perceptual Audio Coding, Art of Design for Computer Music
- GPA: 4.078/4.000

Bachelor of Science in Mathematics (with a Minor in Music)
Degree Conferred: June 2015
The University of California, San Diego, La Jolla, CA, USA
- Graduated Magna Cum Laude, Honors with High Distinction in addition to receiving Provost's Honors every quarter of study
- Relevant Coursework: Music Technology Seminar, Computer Music II, Computer Music I, Musical Acoustics, Advanced Data Structures
- GPA: 3.842/4.000 (Major GPA: 3.646/4.000, Minor GPA: 4.000/4.000)

Publications

- M. J. Olsen, K. J. Werner and F. G. Germain, "Network Variable Preserving Step-size Control in Wave Digital Filters", in *Proc. Of the Int. Conf. On Digital Audio Effects (DAFx-17)*, Edinburgh, United Kingdom, Sept. 5 – 9 2017.
- K. J. Werner, M. J. Olsen, M. Rest and J. D. Parker, "Generalizing Root Variable Choice in Wave Digital Filters with Grouped Nonlinearities", in *Proc. Of the Int. Conf. On Digital Audio Effects (DAFx-17)*, Edinburgh, United Kingdom, Sept. 5 – 9 2017.
- M. J. Olsen, K. J. Werner and J. O. Smith, "Resolving Grouped Nonlinearities in Wave Digital Filters Using Iterative Techniques," in *Proc. of the Int. Conf. on Digital Audio Effects (DAFx-16)*, Brno, Czech Republic, Sept. 5 – 9 2016.
- W. R. Dunkel, M. Rest, K. J. Werner, M. J. Olsen and J. O. Smith, "The Fender Bassman 5F6–A Family of Preamplifier Circuits – A Wave Digital Filter Case Study ," in *Proc. of the Int. Conf. on Digital Audio Effects (DAFx-16)*, Brno, Czech Republic, Sept. 5 – 9 2016 (Received award for 3rd best paper of the conference).

- M. J. Olsen, J. O. Smith and J. S. Abel, "A Hybrid Filter–Wavetable Oscillator Technique for Formant-Wave-Function Synthesis ," in *Proc. of the 13ᵗʰ Int. Conf. on Sound and Music Computing (SMC-16)*, Hamburg, Germany, Aug. 31 – Sept. 3 2016.
- K. J. Werner, W. R. Dunkel, M. Rest, M. J. Olsen and J. O. Smith, "Wave Digital Filter Modeling of Circuits with Operational Amplifiers," in *Proc. of the European Signal Process. Conf. (EUSIPCO)*, Budapest, Hungary, Aug. 29 – Sept. 2 2016.

Research Experience

University of California, San Diego, Department of Mathematics   August 2014 – June 2015
Mathematics Honor's Thesis research (advisor: Prof. Michael Holst – Math/Physics)
- Wrote undergraduate honor's thesis on the topic of time-frequency analysis with respect to lossy audio coding with a particular focus on the Gabor transform

Awards

- Stanford Arts Institute, Denning Family Fellowship for the Arts   2015 – 2016

Affiliations/Membership

Golden Key International Honour Society   November 2013 - Present
- World's largest collegiate honor society. Applies only to top 15% of undergraduates by invitation only

Phi Theta Kappa Honor Society   April 2009 - Present
- Honor society of the two-year college. Requires a GPA of 3.5 or greater.

Work Experience

7ᵗʰ Dimension LLC – SQL Developer   October 2017 – Present
- Design new and support existing business software and reports and code to meet the needs of clientele

Korg Research and Development – Audio DSP Internship   July 2017 – October 2017
- Analyzed a circuit in the Korg ARP Odyssey synthesizer and developed a new DSP algorithm to simulate the behavior of the circuit digitally. Used an oscilloscope to measure circuit component voltages. Used Matlab to analyze traces and develop new alogrithm. Implemented final algorithm in C++ code in the ARP ODYSSEi software synthesizer.

CCRMA, Stanford – Graduate Student Liaison   September 2016 – June 2017
- Half-time research assistantship position with work focused on restarting the CCRMA industrial affiliates program

- Duties to include: website redesign, communication, coordination and outreach with industrial affiliates and coordination of the CCRMA open house to occur in Spring 2017

Stanford Pre-Collegiate Summer Institutes – Drop-In T.A.   June – July 2016
- Assisted high school age students with background theory and programming assignments for artificial intelligence course
- Gave three one-hour lectures to the class on the following topics: differential calculus, signal convolution, the fast Fourier transform

7th Dimension LLC – IT Support and Development, Level II   July 2012 – August 2016
- Design reports, database scripts and business software to meet needs of clientele using MS Access, SQL Server, tSQL code, SSRS and SSIS database technologies
- Support existing software solutions by troubleshooting bug reports and making client requested modifications

Archco Staffing – Database Developer and Report Writer   July 2006 – July 2012
- Develop and maintain in-house and 3rd party solutions to handle processing of client payrolls
- Develop custom reports and in-house software to meet reporting and data storage needs of internal staff and departments