

Curriculum Vitae

Personal Information

Name: Vinoo Alluri
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Languages: Telugu, English, Hindi, Beginner's level Italian, French, and Finnish

Present post

- Post-Doctoral Researcher, University of Geneva, November 2014 - April 2016
- Post-Doctoral Researcher, University of Jyväskylä, May 2014 - December 2016
Research Interests: Cognitive Neuroscience, fMRI studies, Music Information Retrieval, Cross-cultural studies, Digital Signal Processing

Academic degrees

- **2012 - Doctor of Philosophy** (Musicology), University of Jyväskylä, Finland
Title of dissertation: *Perceptual, Acoustic, and Neural Correlates of Polyphonic Timbre*
- **2007 - Master of Science** (Music Engineering Technology), University of Miami, USA
Title of Master's thesis: *Automatic Musicological Classification of Western Classical Music*
- **2004 - Bachelor of Engineering** (Electronics and Communication Engineering), Vasavi College of Engineering, India

Awards

- Award of merit for academic excellence, University of Miami, 2007
- Award for graduating top of the class, Vasavi College of Engineering, 2004

Teaching

- Teacher at the Department of Music, University of Jyväskylä for Music, Mind and Technology Masters Programme (January 2008 - 2012)
- Teaching Assistant at University of Miami for Senior Undergraduate Music Engineering students (August 2006 - May 2007)
- Teacher at Rishi Valley School, India (December 2004 - May 2005)

Publications

In refereed international journals

- Alluri V., Brattico, E., Toiviainen, P., Burunat, I., Bogert, B., Numminen, J., Kluchko, M. (in press) Musical expertise modulates functional connectivity of limbic regions during continuous music listening. *Special Issue: Psychomusicology: Music, Mind and Brain.*

- Poikonen H, Alluri V, Brattico E, Lartillot O, Tervaniemi M, Huotilainen M. (2015) *Neuroscience*. Nov 7. pii: S0306-4522(15)00989-6. doi: 10.1016/j.neuroscience.2015.10.061.
- Burunat, I., Toiviainen, P., Alluri V., Bogert, B., Ristaniemi T., Sams, M., Brattico, E. (2015). The reliability of continuous brain responses during naturalistic listening to music. *Neuroimage*, 124: 224-231. doi:10.1016/j.neuroimage.2015.09.005
- Burunat, I., Alluri V., Toiviainen, P., Numminen, J., Brattico, E. (2014). Dynamics of brain activity underlying working memory for music in a naturalistic condition. *Cortex*, 57: 254-269.
- Cong, F., Puoliväli, T., Alluri, V., Sipola, T., Burunat, I., Toiviainen, P., Nandi, A. K., Brattico, E., Ristaniemi T. (2014). Key Issues in Decomposing fMRI during Naturalistic and Continuous Music Experience with Independent Component Analysis, *Journal of Neuroscience Methods*, 223:74-84.
- Alluri V., Toiviainen P., Lund T., Wallentin M., Vuust P., Nandi A., Ristaniemi T., and Brattico, E. (2013). From Vivaldi to Beatles and back: predicting brain responses to music. *Neuroimage*. 83, 627-636. doi: 10.1016/j.neuroimage.2013.06.064
- Toiviainen P., Alluri V., Brattico, E. Wallentin M., and Vuust P. (2013). Capturing the musical brain with Lasso: dynamic decoding of musical features from fMRI data. *Neuroimage*.
- Cong, F., Alluri, V., Nandi, A. K., Toiviainen, P., Fa, R., Abu-Jamous, B., Gong, L., Craenen, B. G. W., Poikonen, H., Huotilainen, M., & Ristaniemi, T. (2013). Linking brain responses to naturalistic and continuous music through analysis of ongoing EEG and stimulus features. *IEEE Transactions on Multimedia*, 15(5): 1060-1069. DOI: 10.1109/TMM.2013.2253452.
- Alluri, V. & Toiviainen, P. (2012). Effect of enculturation on the semantic and acoustic correlates of polyphonic timbre. *Music Perception*, 29(3), 297-310.
- Alluri, V., Toiviainen, P., Jääskeläinen, I., Sams, M., Glelean, E., & Brattico, E. (2012). Large-scale brain networks emerge from dynamic processing of musical timbre, key and rhythm. *Neuroimage*. 59, 3677-3689. doi:10.1016/j.neuroimage.2011.11.019.
- Eerola, T., Alluri, V., & Ferrer, R. (2012). Timbre and affect dimensions: Evidence from affect and similarity ratings and acoustic correlates of isolated instrument sounds. *Music Perception*, 30(1), 49-70.
- Brattico, E., Alluri V., Bogert, B., Jacobsen, T., Vartiainen, N., Nieminen, S., & Tervaniemi, M. (2011). A functional MRI study of happy and sad emotions in music with and without lyrics. *Frontiers in Psychology* 2, 308. doi: 10.3389/fpsyg.2011.00308.
- Alluri, V. & Toiviainen, P. (2010). Exploring perceptual and acoustic correlates of polyphonic timbre. *Music Perception*, 27(3), 223–241.

Other refereed publications

- Cong, F., Alluri, V., Nandi, A., Toiviainen, P., Fa, R., Abu-Jamous, B., Gong, L., Craenen, B., Poikonen, H., Huotilainen, M., Ristaniemi, T. (2013). Linking Brain Responses to Naturalistic Music through Analysis of Ongoing EEG and Stimulus Features, *IEEE Transactions on Multimedia*, 15(5): 1060-1069.
- Cong, F., Phan, A. H., Zhao, Q, Nandi, A. K., Alluri, V., Toiviainen, P., Poikonen, H., Huotilainen, M., Cichocki, A., Ristaniemi, T. (2012). Analysis Of

- Ongoing EEG Elicited By Natural Music Stimuli Using Nonnegative Tensor Factorization. In 19th European Signal Processing Conference (EUSIPCO-2012).
- Alluri, V., & Toiviainen, P. (2010). Cross-cultural similarities in polyphonic timbre perception. Proceedings of the 11th International Conference on Music Perception and Cognition, (ICMPC). Seattle, United States: University of Washington.
 - Alluri, V. & Toiviainen, P. (2009). In search of perceptual and acoustic correlates of polyphonic timbre. In J. Louhivuori, T. Eerola, S. Saarikallio, T. Himberg, & P.-S. Eerola (Eds.) Proceedings of the 7th Triennial Conference of European Society for the Cognitive Sciences of Music. Jyväskylä, Finland.
 - Eerola, T., Alluri, V., & Ferrer, R. (2008). Emotional connotations of isolated instruments sounds. In Proceedings of the 10th International Conference on Music Perception and Cognition (ICMPC10), pp. 483–489, Sapporo, Japan. University of Hokkaido.

Conference Presentations and Media Appearances

Presentations in Conferences and other contexts

- Toiviainen, P. Alluri, V., & Brattico, E. Lateralized modulation of amygdala connectivity by valence during continuous music listening. In 4th International Conference on Music and Emotion. Geneva. Poster.
- Alluri, V., Toiviainen, P., Brattico, E., (2015). Subcortical network hub differences in musicians and non-musicians during continuous listening to music. In 4th International Conference on Music and Emotion. Geneva. Poster.
- Toiviainen, P. Alluri, V., Burunat, I., & Brattico, E. Whole-Brain Functional Connectivity During Naturalistic Music Listening: Effect of Musical Training. Ninth Triennial Conference of the European Society for the Cognitive Sciences of Music, Manchester, UK. Aug 21, 2015.
- Alluri, V., Toiviainen, P., Burunat, I., Bogert, B., Brattico, E., (2014). Musical training modulates liking-dependent connectivity during continuous listening. In The Neurosciences and Music V: Cognitive Stimulation and Rehabilitation. Dijon. Poster.
- Puoliväli, T., Cong, F., Alluri, V., Lin, Q., Toiviainen, P., Nandi, A., Brattico, E., Ristaniemi, T. (2013). Semi-blind Independent Component Analysis of Functional MRI Elicited by Continuous Listening to Music, International Conference on Acoustics, Speech, and Signal Processing 2013 (ICASSP2013), Vancouver, Canada, on May 26-31, pp.1310-1314.
- Sipola, T., Cong, F., Ristaniemi, T., Alluri, V., Toiviainen, P., Brattico, E., Nandi, A. (2013). Diffusion Map for Clustering fMRI Spatial Maps Extracted by Independent Component Analysis, Proc. IEEE Workshop on Machine Learning for Signal Processing (MLSP) 2013, Southampton, United Kingdom, September 22-25.
- Tsatsishvili, V., Cong, F., Puoliväli, T., Alluri, V., Toiviainen, P., Nandi, A. K., Brattico, E., Ristaniemi, T (2013). Dimension Reduction for Independent Component Analysis to Decompose fMRI during Real-World Auditory Experiences: Canonical Correlation Analysis vs. Principal Component Analysis. In 21st European Symposium on Artificial Neural Networks, Computational Intelligence and Machine Learning. Belgium. Poster.
- Cong, F., Phan, A. H., Zhao, Q., Nandi, A, K, Alluri, V., Toiviainen, P., Poikonen, H., Huotilainen, M., Cichocki, A., & Ristaniemi, T. (2012). Analysis of

Ongoing EEG Elicited by Natural Music Stimuli Using Nonnegative Tensor Factorization. In Proc. The 2012 European Signal Processing Conference (EUSIPCO-2012), Bucharest, Romania, August 27-31, 2012, 494-498.

- Alluri, V., Toiviainen, P., Lund, T., Wallentin, M., Vuust, P., & Brattico, E. (2012). From Vivaldi to Beatles and back: Predicting brain responses to music in real time. In The 16th Annual Symposium for Music Scholars in Finland. Jyväskylä, Finland: University of Jyväskylä, Presentation.
- Alluri, V., Toiviainen, P., Lund, T., Wallentin, M., Vuust, P., Brattico, E (2012). From Vivaldi to Beatles and Back: Predicting Brain Responses to Music in Real Time. In The 12th International Conference on Music Perception and Cognition, (ICMPC). Thessaloniki, Greece: Aristotle University of Thessaloniki. Presentation.
- Toiviainen, P., Alluri, V., Brattico, E., Nielsen, A. H., Dohn, A., Wallentin, M., Vuust, P (2012). I Can Read Your Mind: Inverse Inference in Musical Neuroinformatics. In The 12th International Conference on Music Perception and Cognition, (ICMPC). Thessaloniki, Greece: Aristotle University of Thessaloniki. Presentation.
- Alluri, V., Toiviainen, P., Jääskeläinen, I., Sams, M., Glerean, E., & Brattico, E. (2011). Processing Tango Nuevo in the brain. In The Neurosciences and Music - IV. Edinburgh, Scotland, UK. Poster.
- Glerean, E., Brattico, E., Toiviainen, P., Alluri, V., Jääskeläinen, I. P., Sams, M. (2011). Structural hearing of music: patterns of dynamic functional connectivity with fMRI. In The Neurosciences and Music – IV Learning and Memory, Edinburgh, UK. Poster.
- Alluri, V., Toiviainen, P., Jääskeläinen, I., Sams, M., Glerean, E., & Brattico, E. (2011). Processing Tango Nuevo in the brain. In 100 Years of Musicological Scholarship Celebration Symposium, Helsinki, Finland. Presentation.
- Alluri, V. & Toiviainen, P. (2010). Cross-cultural similarities in polyphonic timbre perception. In *The 11th international conference on music perception and cognition*. Seattle, USA. Presentation.
- Alluri, V., Toiviainen, P., Sams, M., Jääskeläinen, I., & Brattico, E. (2010). Brain correlates of musical feature processing during listening to modern tango. In *11th International Conference on Music Perception and Cognition*. Seattle: Washington US. Poster.
- Alluri, V. & Toiviainen, P. (2009). Exploring perceptual and acoustical correlates of polyphonic timbre. In *The 13th Annual Symposium for Music Scholars in Finland*. Turku, Finland: University of Turku, Presentation.

Public media appearances

- Alluri, V. (2014). Web news, *Different Brain Regions Handle Different Music Types*, March 12, 2014, Scientific American.
- Alluri, V. (2013). Web news, *This is your brain on Vivaldi and Beatles*, August 7, 2013, Science Daily.
- Alluri, V. (2011). Web news, *Musiikki aktivoi aivoissa liike- ja tunnealueita (Music activates motor and emotion areas in the brain)*. December 5, 2011, YLE, Finland.
http://yle.fi/uutiset/kulttuuri/2011/12/musiikki_aktivoi_aivoissa_liike_ja_tunnealueita_3081204.html.

- Alluri, V. (2011). Web news, *Musiikin kuuntelu saa aivot syttymään (Listening to music lights up the brain)*. December 5, 2011, Turun Sanomat, Finland. <http://www.ts.fi/online/kulttuuri/285486.html>
- Alluri, V. (2011). Web news, *Muusika ergastab tervet aju (Music activates the whole brain)*. December 8, 2011, Postimees, Estonia. <http://www.postimees.ee/661678/muusika-ergastab-tervet-aju/>.
- Alluri, V. (2011). Web news, *Listening to Music Lights Up the Whole Brain*. December 5, 2011, Science Daily. <http://www.sciencedaily.com/releases/2011/12/111205081731.htm>.
- Alluri, V. (2011). Web news, *Study reveals how wide brain networks are activated during music listening*. December 5, 2011, Medical News. <http://www.news-medical.net/news/20111205/Study-reveals-how-wide-brain-networks-are-activated-during-music-listening.aspx>.
- Alluri V. (2011). Web news, *Toe-Nailed: The Secret Of Dancing*. December 8, 2011. Croatian Times. http://www.croatiantimes.com/news/Around_the_World/2011-12-06/23676/Toe-Nailed%3A_The_Secret_Of_Dancing
- Alluri, V. (2011). Web news, *Muestran por primera vez cómo la música activa las áreas emocional, motora y creativa del cerebro*. December 8, 2011, Europa Press. <http://www.europapress.es/salud/noticia-muestran-primera-vez-musica-activa-areas-emocional-motora-creativa-cerebro-20111205164115.html>
- Alluri, V. (2011). Web news, *Pour l'écoute de musique lumières jusqu'à tout le cerveau*. December 8, 2011, Francaise Nouvelles. <http://www.francaisenouvelles.com/pour-lecoute-de-musique-lumieres-jusqua-tout-le-cerveau/>
- Alluri, V. (2011). Web news, *Прослушивание музыки активирует весь мозг (listening to music activates the whole brain)*. December 6, 2011, PsyPress, Russia. <http://psynews.ru/psynews/25542.shtml>
- Alluri, V. (2011). Newspaper article, *Music does wonders to the human brain, says researcher duo*. December 23, 2011. The Hindu, India.
- Alluri, V. (2011). Web news, *How music touches the brain*. December 27, 2011, Science Nordic. <http://sciencenordic.com/how-music-touches-brain>.

Invited Talk

- Alluri, V. (2014, December). fMRI meets MIR: Neural Correlates of Music and Pleasure Processing During Naturalistic Listening. At *3rd International Symposium Frontiers in Neuroscience*. Buzios, Brazil. Presentation.

Referee Assignments

- Journals: Music Perception, Neuroimage, PLOS One
- Conferences: International Society for Music Information Retrieval (ISMIR 2014, 2015)

Employment History

- Audio Consultant at IMImobile, Hyderabad, India (July 2007 – October 2007)
- Audio Consultant at IMImobile, Hyderabad, India (August 2004 – October 2004)

Programming and other Computer skills

MATLAB, MAXMSP, C/C++, Pure Data, FSL

Background in Music

Passed Grade Five from the Trinity College of Music, London, in Piano and Violin