May 5, 2015

Dear selection committee:

Hello, my name is Martin Miguel. I am a soon-to-be Computer Science Master from the Universidad of Buenos Aires, Argentina. I am currently wrapping up my Master's Thesis on music cognition topics. My thesis topic is modeling tactus inference (or BI) but looking for a model that can provide insight on how we synchronize with music when we hear it. I heard of the doctoral opportunity by following the music cognition blog by Prof. Dr. H. Honing.

I am currently being advised by Dr. Diego Fernandez Slezak from the Applied Artificial Intelligence Lab at UBA.[1] He can be reached for references at `dfslezak@dc.uba.ar`.

I got into the field of music cognition out of curiosity for the musical processes that happen in a listener's mind. I have been dancing and playing music for over 10 years now and I am very curious about what's the magic that makes us twitch. In particular, I have been learning to tap dance for the last 4 years and I have found some rhythmical passages that are particularly evocative. This is not common in tap dancing passages and I am afraid that comes from lack of theoretical knowledge on how to produce rhythms. The issue lead to the idea of trying to model some of the rhythmical cognitive processes in play in order to develop a tool that can help tap musicians get closer to their own productions. In particular, I want to make situations of tension and unexpectedness in music explicit, being this what I believe makes this passages so interesting. The focus is on rhythmical expectations, i.e. expectations on the timing of musical events.

I will be graduating with a Bs + Ms by the end of June. I am very interested in further pursuing my line of research, but I'm looking towards doing so among people who know the subject better. Sadly, there is no one else at UBA working on these topics. As a future view, I'd like to enhance my model (or work on another one) to try to capture the whole human process of understanding rhythmicality. I'd also like to apply this rhythm perception model to other situations such as the timing of speech in drama performances, oral storytelling and stand-up comedy.

The research goals within ILLC match my interests perfectly. The music cognition group[2] shares my interest in expressive performances and their cognitive interpretation.[3] It also shares part of my methodology: computational modeling based on statistical tools.[4] As further reference, a work in progress paper by myself can be read here.

I am hoping that through this application a conversation can be started towards how related my research interests are with those of the MCG and how I can be of assistance to it as well as how it can help me grow and pursue my goals.

Yours sincerely,

Martin A. Miguel

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[1] `http://liaa.dc.uba.ar/`

[2] `http://cf.hum.uva.nl/mmm/`

[3] Honing, H. (2013). The structure and interpretation of rhythm in music. In Deutsch, D. (ed.), Psychology of Music, 3rd edition (pp. 369-404). London: Academic Press.

[4] Sadakata. M., Desain, P. & Honing, H. (2006). The Bayesian way to relate rhythm perception and production. Music Perception, 23(3), 267-286. (c) 2006