Martin A. Miguel

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Educación

Universidad de Buenos Aires (UBA) *Buenos Aires, Argentina*

Doctorado en Ciencias de la Computación *Abril 2016 - Mayo 2022 (Esperado)*

- Director: Diego Fernandez Slezak - Laboratorio de Inteligencia Artifical Aplicada (LIAA) Departamento de Ciencias de la Computación, Universidad de Buenso Aires, Buenos Aires, Argentina; Instituto de Ciencias de la Computación (ICC), CONICET-UBA, Argentina
- Co-director: Mariano Sigman - Laboratorio de Neurociencia, Universidad Torcuato Di Tella, Buenos Aires, Argentina; Facultad de Lenguas y Educación, Universidad Nebrija, Madrid, España

Escuela de Música Contemporánea *Buenos Aires, Argentina*

Músico Profesional *Abril 2015 - Junio 2017 (En Pausa)*

Universidad de Buenos Aires *Buenos Aires, Argentina*

Licenciatura en Ciencias de la Computación *Abril 2008 - Diciembre 2015*

Publicaciones Principales

Publicadas

Miguel, M.A. and Fernandez Slezak, D. (2021). Modeling beat uncertainty as a 2D distribution of period and phase: a MIR task proposal. Proc. of the 22nd Int. Society for Music Information Retrieval Conf., Online. Paper describing a methodology to model beat uncertainty considering period and phase from free tapping data and an evaluation criterion for MIR models.

Pironio, N., Fernandez Slezak, D. and **Miguel, M.A.** (2021) Pulse clarity metrics developed from a deep learning beat tracking model. Proc. of the 22nd Int. Society for Music Information Retrieval Conf., Online, 2021. Paper describing metrics of pulse clarity obtained from modifications to a neural-network based beat tracking model.

Miguel, M.A., Riera, P., and Fernandez Slezak, D. (2021) A simple and cheap setup for timing tapping responses synchronized to auditory stimuli. Behav Res. https://doi.org/10.3758/s13428-021-01653-y Paper describing an experimental setup for capturing timing of tapping responses synchronized against auditory stimuli. The setup requires minimal programming skills and uses unexpensive equipment.

Miguel, M.A., Sigman, M. and Fernandez Slezak, D. (2020) From beat tracking to beat expectation: Cognitive-based beat tracking for capturing pulse clarity through time. PLoS ONE 15(11): e0242207. https://doi.org/10.1371/journal.pone.0242207 Paper presenting a model of beat tracking adapted to produce a metric of pulse-clarity over time.

En Preparación

Grammar-based modeling of rhythmic perception Paper describing a model of beat and meter expectation using grammar-based bayesian inference. To be presented in *Music Cognition Journal*.

Experiencia Docente

Jefe de Trabajos Prácticos, Algoritmos y Estructuras de Datos II, *Universidad de Buenos Aires* Abril 2016 – actualidad

Docente Auxiliar, Algoritmos y Estructuras de Datos II, *Universidad de Buenos Aires* Marzo 2011 – Julio 2012

Experiencia Laboral

Consultor Técnico, *Projecto MateMarote (Juegos educativos online)* Junio 2017 - actualidad
Data Scientist, *Avenida.com* Enero 2016 - Marzo 2016
Ingeniero de Software, *Projecto MateMarote (Juegos educativos online)* Abril 2015 - Diciembre 2015
Pasantía en Desarrollo de Software, *Google.com* Enero 2014 - Abril 2014
Programador Java, *Despegar.com* Agosto 2012 - Diciembre 2013
Programador Java (J2ME / Blackberry), *SenseByte* Enero 2009 - Enero 2010

Mentoring

Lucas Somacal, Mentor de pasantía de investigación para estudiantes de grado: exporación de transferencia de estilo en música simbólica usando espacios latentes en VAEs 2021

Nicolás Pironio, Mentor de pasantía de investigación para estudiantes de grado: analisis de la reutilización de un modelo de seguimiento de pulso basado en redes neuronales para estimación de claridad del pulso 2020

Conferences and Schools

Posters

Miguel, M.A, Fernandez Slezak, D. International Conference of Students of Systematic Musicology 21, Online and Aahrus, Denmark, 2021 (DOI 10.17605/OSF.IO/5WRS3) Poster presenting a methodology from gathering a beat distribution from free tapping data.

Miguel, M.A, Sigman, M., Fernandez Slezak, D. Neuromusic VII, Online and Aahrus, Denmark, 2021. Poster describing an updated evaluation of our beat expectation model's measure of pulse clarity considering new data and constrating models.

Pironio, N., Fernandez Slezak, D., **Miguel M.A.**. Rhythm Perception and Production Workshop 2021, Online and Oslo, Norway, 2021 (DOI 10.17605/OSF.IO/SDQ5P) Poster preseting the evaluation of pulse clarity models on multiple datasets.

Pironio, N., Fernandez Slezak, D., **Miguel M.A.**. 16th International Conference on Music Perception and Cognition, Online 2021 Poster presenting metrics of pulse clarity obtained from modifications to a neural-network based beat tracking model.

Miguel, M.A, Sigman, M., Fernandez Slezak, D. Biannual meeting of the Society of Music Perception and Cognition 2019, New York, USA (DOI 10.17605/OSF.IO/7SQAW). Poster describing a novel experimental setup that extends on previous methods allowing exploration of subjective tacti on top of pulse clarity.

Miguel, M.A, Sigman, M., Fernandez Slezak, D. Biannual meeting of the Society of Music Perception and Cognition 2019, New York, USA (DOI 10.17605/OSF.IO/FGVB2). Poster describing how our beat expectation model's measure of pulse clarity relates with pulse clarity extracted from empirical data.

Schools

Assistance to KHIPU 2019. University of the Republic, Montevideo, Uruguay

Assistance to Machine Learning Summer School (MLSS 2018). Torcuato Di Tella University, Buenos Aires, Argentina

Assistance and volunteering at International Joint Conference in Artificial Intelligence 2015. Buenos Aires, Argentina

Other publications

Belloli, L. **Miguel, M.A.**, Goldin, A.P. (2016) Mate Marote: a BigData platform for massive scale educational interventions. 45-JAIIO, 2016, Buenos Aires, Argentina (ISSN: 2451-7569, p107-114). Paper describing a web platform that hosts and collects data from educational games.