Martin Miguel

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MISSION STATEMENT

I have always been driven by curiosity and problem-solving. This drive took me to study Computer Science as a mean to gain the ability to ask good questions, find rigorous answers and carry them into real world solutions. Throughout my career I have developed both my applied and academic skills. I have worked in industry and acquired methodology and know-how and I am now working on my PhD degree, learning from research papers and performing experiments. Having curiosity as my main motor I have outed from strict computer science onto empirical sciences, mainly neurosciences. I am interested in human perception and interaction with each other and the world. I am currently trying to add knowledge about how we understand the world and create expectations about the future. More specifically, I am working on modeling and verifying models on musical expectations, as it is a familiar semi-structured stimuli that makes a good first step in that direction.

EDUCATION

PhD in Computer Science

Expected April 2021 - April 2016 | UBA, Buenos Aires, Argentina
Advisor: Diego Fernandez Slezak - LIAA, DC, UBA, Buenos Aires, Argentina; ICC, CONICET-UBA, Argentina
Co-advisor: Mariano Sigman - LNI, UTDT, Buenos Aires, Argentina

Professional Musician

Paused (June 2017) - April 2015 | Escuela de Música Contemporánea, Buenos Aires, Argentina

BS + MS in Computer Science

December 2015 - April 2008 | UBA, Buenos Aires, Argentina

EXPERIENCE

ASSISTANT PROFESSOR | Universidad de buenos aires
Currently - April 2016
Assistant Professor of *Algorithms and Data Structures II*.

DATA SCIENTIST | Avenida.com
March 2016 - January 2016
Improvement of search engine configuration, implementation of *search-as-you-type* features and assistance in team management.

SOFTWARE ENGINEER | MateMarote
December 2015 - April 2015
Development of java backend infrastructure and javascript videogames for a neuroscientifically based educational software.

INTERN SOFTWARE ENGINEER | Google.com
April 2014 - January 2014
Development and extensions of testing frameworks for performance, end-to-end and regression tests.

JAVA PROGRAMMER | Despegar.com
December 2013 - August 2012
Development of components integrating a larger application system. Development of web applications and utility frameworks.

ASSISTANT PROFESSOR | Universidad de Buenos Aires
July 2012 - March 2011
Assistant Professor of *Algorithms and Data Structures I & II*.

JR. JAVA PROGRAMMER (J2ME / BLACKBERRY) | SenseByte
January 2010 - January 2009
Development of both stand-alone and client-server applications. Development of applications interfacing with non-standard hardware.

RESEARCH

PUBLICATIONS

Mate Marote: a BigData platform for massive scale educational interventions.

Martin A. Miguel
45-JAIIO, 2016, Buenos Aires, Argentina (ISSN: 2451-7569).

Inferencia de Tactus con Fundamentos Estadisticos para Tap-dancing.

Martin A. Miguel
44-JAIIO, 2015, Rosario, Argentina (ISSN: 2451-7585).

From beat tracking to beat expectation

Martin A. Miguel, Diego Fernandez Slezak, Mariano Sigman
(Under review) Journal of New Music Research

(In preparation) Simple framework for rhythmic asynchrony experiments in Python

Martin A. Miguel, Diego Fernandez Slezak, Mariano Sigman
Paper describing an experimental setup for tapping used to measure synchronization of responses against the stimuli. The setup requires minimal not-specialized equipment. To be published in *Behavioural Research Methods*.

(In preparation) Bayesian beat expectation and uncertainty

Martin A. Miguel, Diego Fernandez Slezak, Mariano Sigman
Paper describing evaluation of beat expectation model against experimentally captured responses of tapping. To be published in *Cognitive Science Journal*.

CONFERENCES

Tapping to your own beat: experimental setup for exploring subjective tacti distribution and pulse clarity

Martin A. Miguel, Mariano Sigman, Diego Fernandez Slezak
Poster describing a novel experimental setup that extends on previous methods allowing exploration of subjective tacti on top of rhythmic complexity. Presented in SMPC 2019, New York, USA.

A continuous model of pulse clarity: towards inspecting affect through expectations in time

Martin A. Miguel, Mariano Sigman, Diego Fernandez Slezak
Poster describing how our beat expectation model's measure of rhythmic complexity related with complexity extracted from empirical data. Presented in SMPC 2019, New York, USA.

SCHOLARSHIPS

PhD Grant | CONICET, Argentina

April 2021 - April 2016

COURSEWORK

GRADUATE

Calculus	9	Systems Networks	10
Algebra	5	Database Systems	9
Probability and Statistics	10	Logic and Computability Theory	9
Algorithms and Data Structures I	10	Language Theory	10
Algorithms and Data Structures II	10	Programming Paradigms	10
Algorithms and Data Structures III	9	Neural Networks	9
Computer System Architecture I	8	Introduction to Speech Technologies	9
Computer System Architecture II	8	Game Theory	Assisted Only
Operating Systems	10	Operating Systems Development	10
Numerical Methods	10	Machine Learning	10
Software Engineering I	7	Master's Thesis	10
Software Engineering II	9		

Graduate GPA	9.14
Grade Scale	10

DOCTORATE

Introduction to Data Science
Data Science in R
Bayesian Inference
Integration of Knowledge Bases
Signal Processing
Introduction to Computational Cognitive Neuroscience