

Juan Miguel L. Andres-Bray  
*Curriculum Vitae*

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**RESEARCH INTERESTS**

Educational Data Mining, Learning Analytics, MOOCs, Affective Computing, Educational Games

**EDUCATION**

- Ongoing **Ph.D.**, Teaching, Learning, and Teacher Education  
*University of Pennsylvania*  
Advisor: Ryan S. Baker, Ph.D.
- 2014 **M.S.**, Computer Science  
*Ateneo de Manila University*  
Advisor: Ma. Mercedes T. Rodrigo, Ph.D.  
Thesis: A Study of the Relationships Between Learning and Affect Trajectories Within Newton's Playground
- 2011 **B.S.**, Computer Science  
Specialization in Enterprise Systems  
*Ateneo de Manila University*  
Advisor: Ma. Mercedes T. Rodrigo, Ph.D.  
Thesis: Emotiv EPOC in the Implementation of an Assistive Smart Room

**PUBLICATIONS**

*Journal Papers*

Gardner, J., Brooks, C., **Andres, J.M.L.**, & Baker, R.S. (under review). MORF: A Framework for MOOC Predictive Modeling and Replication at Scale. *Journal of Open Research Software*.

**Andres, J.M.L.**, Baker, R.S., Siemens, G., Gašević, D., & Spann, C.A. (2017). Replicating 21 Findings on Student Success in Online Learning. *Technology, Instruction, Cognition, & Learning Journal*, 10(1), 313-333.

*Conference Papers in Stringently Refereed Proceedings*

Alevan, V., Sewall, J., **Andres, J.M.L.**, Sotillare, R., Long, R.A., & Baker, R.S. (in press). Towards Adapting to Learners at Scale: Integrating MOOC and Intelligent Tutoring Frameworks. 5<sup>th</sup> Annual ACM Conference on Learning at Scale. London, UK, June 26-28, 2018.

Gardner, J., Brooks, C., **Andres, J.M.L.**, & Baker, R.S. (in press). Replicating MOOC Predictive Models at Scale. 5<sup>th</sup> Annual ACM Conference on Learning at Scale. London, UK, June 26-28, 2018.

**Andres, J. M. L.**, Baker, R. S., Gašević, D., Siemens, G., Crossley, S. A., & Joksimović, S. (2018, March). Studying MOOC completion at scale using the MOOC replication framework. In *Proceedings of the 8th International Conference on Learning Analytics and Knowledge* (pp. 71-78). ACM.

Banawan, M.P., Rodrigo, M.M.T., & **Andres, J.M.L.** (2017). Predicting Student Carefulness within an Educational Game for Physics using Support Vector Machines. 25<sup>th</sup> International Conference on Computers in Education. Christchurch, New Zealand, December 4-8, 2017.

Kai, S., **Andres, J.M.L.**, Paquette, L., Baker, R.S., Gordon, K., Watkins, H., & Moore, M. (2017). Predicting Student Retention from Behavior in an Online Orientation Course. 10<sup>th</sup> International Conference on Educational Data Mining. Wuhan, China, June 25-28, 2017.

Ocuppaugh, J.O., **Andres, J.M.L.**, Baker, R.S., DeFalco, J., Paquette, L., Geogoulas-Sherry, V., Lester, J., Rowe, J., Mott, B., Brawner, K., & Sottolare, R. (2017). Affect Dynamics in Military Trainees. 18<sup>th</sup> International Conference on Artificial Intelligence in Education. Wuhan, China, June 28-July 2, 2017.

Palaoag, T.D., Rodrigo, M.M.T., **Andres, J.M.L.**, Andres, J.M.A.L., & Beck, J.B. (2016). Wheel-spinning in a Game-Based Learning Environment for Physics. 13<sup>th</sup> International Conference on Intelligent Tutoring Systems. Zagreb, Croatia, June 6-10, 2016.

Andres, J.M.A.L., **Andres, J.M.L.**, Rodrigo, M.M.T., Beck, J.B., & Baker, R.S. (2015). An Investigation of Eureka and the Affective States Surrounding Eureka Moments. 23<sup>rd</sup> International Conference on Computers in Education. Hangzhou, China, November 30-December 4, 2015.

Banawan, M.P., Rodrigo, M.M.T., & **Andres, J.M.L.** (2015). An Investigation of Frustration Among Students Using Physics Playground. 23<sup>rd</sup> International Conference on Computers in Education. Hangzhou, China, November 30-December 4, 2015.

Palaoag, T.D., Rodrigo, M.M.T., & **Andres, J.M.L.** (2015). An Exploratory Study of Persistence Markers Within a Game-Based Learning Environment. 23<sup>rd</sup> International Conference on Computers in Education. Hangzhou, China, November 30-December 4, 2015.

**Andres, J.M.L.**, & Rodrigo, M.M.T. (2014). The Incidence and Persistence of Affective States While Playing Newton's Playground. 7<sup>th</sup> IEEE International Conference on Humanoid, Nanotechnology, Information Technology, Communication and Control, Environment, and Management. Palawan, Philippines, November 13-14, 2014.

**Andres, J.M.L.**, Rodrigo, M.M.T., Sugay, J.O., Baker, R.S., Paquette, L., Shute, V.J., Ventura, M., & Small, M. (2014). An Exploratory Analysis of Confusion Among Students Using Newton's Playground. 22<sup>nd</sup> International Conference on Computers in Education. Nara, Japan, November 30-December 4, 2014.

Rodrigo, M.M.T., Grosch, M., & **Andres, J.M.L.** (2013). Media Usage by Filipino Students – An Empirical Study. 21<sup>st</sup> International Conference on Computers in Education. Bali, Indonesia, November 18-22, 2013.

## *Workshop and Symposium Papers*

Alevan, V., Baker, R.S., Long, R.A., Sewell, J., **Andres, J.M.L.**, Wang, Y., Popescu, O., & Blomberg, N. (2017). Integrating MOOCs and Intelligent Tutoring Systems: edX, GIFT, and CTAT. 5th Annual GIFT Users Symposium. Orlando, Florida, United States. May 10-11, 2017.

Brooks, C., Baker, R.S., & **Andres, J.M.L.** (2017). Infrastructure for Replication in Learning Analytics. 1<sup>st</sup> Workshop on Methodologies in Learning Analytics. Vancouver, Canada. March 12, 2017.

**Andres, J.M.L.**, Rodrigo, M.M.T., Baker, R.S., Pacquette, L., Shute, V.J., & Ventura, M. (2015). Analyzing Student Action Sequences and Affect While Playing Physics Playground. 1<sup>st</sup> International Workshop on Affect, Meta-Affect, Data, and Learning. Madrid, Spain, June 26, 2015.

**Andres, J.M.L.**, Rodrigo, M.M.T., Sugay, J.O., Banawan, M.P., Paredes, Y.V.M., Dela Cruz, J.S., & Palaoag, T.V. (2015). More Fun in the Philippines? Factors Affecting Transfer of Western Field Methods to One Developing World Context. 6<sup>th</sup> International Workshop on Culturally-Aware Tutoring Systems. Madrid, Spain, June 22, 2015.

**Andres, J.M.L.**, & Rodrigo, M.M.T. (2014). Learning and Affect Trajectories Within Newton's Playground. 3<sup>rd</sup> International Workshop on ICT Trends in Emerging Economies. Nara, Japan, December 1, 2014.

## TEACHING AND RESEARCH APPOINTMENTS

- 2016-present **Doctoral Research Fellow**, University of Pennsylvania
- 2015-2016 **Doctoral Research Fellow**, Teachers College, Columbia University
- 2015 **Research Assistant**, Ateneo de Manila University  
Grant: Development and Deployment of Adaptive, Interactive, SMS-Based Modules for English
- 2015 **Information Systems Researcher**, Ateneo de Manila University  
Grant: Stealth Assessment of Student Conscientiousness, Cognitive-Affective States, and Learning Using an Educational Game for Physics
- 2015 **Lecturer**, Ateneo de Manila University
- 2010-2013 **Research Assistant**, Ateneo de Manila University

## COURSES TAUGHT

- Spring 2015 **AMC 125: Mathematics for Computer Science II**, Ateneo de Manila University  
The course covers number representation, graph theory, linear algebra, statistics, and optionally, numerical analysis. The course also teaches and uses the Python programming language.

**CS 105: Theory of Algorithms**, Ateneo de Manila University

The course focuses on the fundamental techniques used to design and analyze efficient algorithms. These techniques include greedy algorithms, divide-and-conquer algorithms, dynamic programming, and graph algorithms.


**COURSES TAKEN**

- Fall 2017 **University of Pennsylvania**  
EDUC 880: Complex, Multilevel, and Longitudinal Research Models  
EDUC 545: Social and Statistical Network Analysis
- Spring 2017 EDUC 726: Foundations of Teaching and Learning  
EDUC 545: Mixed Methods Research  
EDUC 777: Structural Equations Modeling
- Fall 2016 EDUC 727: Education, Culture, and Society  
EDUC 682: Qualitative Modes of Inquiry
- Spring 2016 **Teachers College, Columbia University**  
HUDK 4080: Educational Psychology  
HUDK 4051: Learning Analytics: Process and Theory  
HUDM 5122: Applied Regression Analysis
- Fall 2015 HUDK 4029: Human Cognition and Learning  
HUDK 4050: Core Methods in Educational Data Mining  
HUDM 4122: Probability and Statistical Inference

**AWARDS**

- 2013-2015 **Research Scholarship**, Department of Science and Technology – Engineering Research and Development for Technology (DOST-ERDT)

**AFFILIATIONS**

- 2016-present **Penn Center for Learning Analytics**
- 2015-2017 **Digital Learning Research Network**
- 2015-present  **Interlab**
- 2015-present **Baker Educational Data Mining Laboratory**

**SERVICE**

- 2018 **Organizer**, *replicate.education: A Workshop on Large-Scale Education Replication*, in conjunction with the 11<sup>th</sup> International Conference on Educational Data Mining
- 2016 **Sub-Reviewer**, *18<sup>th</sup> International Conference on Artificial Intelligence in Education*
- 2016 **Program Committee**, *1st International Conference on Advanced Technologies Enhancing Education*

2016 **Program Committee**, *1<sup>st</sup> International Conference on Wearable Technologies, Knowledge Development, and Learning*

2015 **Program Committee**, *6<sup>th</sup> International Workshop on Culturally-Aware Tutoring Systems*

### SEMINARS AND WORKSHOPS ATTENDED

June 2014 **10<sup>th</sup> Annual Learn Lab Summer School**, Carnegie Mellon University

- Educational Data Mining Track
- Mentors: John Stamper, Ph.D. & Michael Eagle, Ph.D.

May 2014 **Educational Data Mining Summer School**, Ateneo de Manila University

- Mentors: Jaclyn Ocumpaugh, Ph.D. & Joseph Beck, Ph.D.

### PROGRAMMING BACKGROUND

Expert	Java, Python, SQL, AWS Suite
Advanced	C++, PHP, R, LISREL, SAS
Basic	Spark, HTML5, Hadoop