José A. Ruipérez Valiente | Juan de la Cierva Researcher

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Research Interests

Learning Analytics, Educational Data Mining, User Behavioral Modeling, Human-Computer Interaction, Game-based Learning, Technology-enhanced Learning, Massive Open Online Courses

Biosketch

José A. Ruipérez-Valiente completed his B.Eng. and M.Eng. in Telecommunications at Universidad Católica de San Antonio de Murcia (UCAM) and Universidad Carlos III of Madrid (UC3M) respectively, graduating in both cases with the best academic transcript of the class. Afterwards, he completed his M.Sc. and Ph.D. in Telematics at UC3M while conducting research at Institute IMDEA Networks in the area of learning analytics and educational data mining. During this time, he completed two research stays of three months each, the first one at MIT and the second one at the University of Edinburgh. Then, José completed his Postdoc at the MIT Teaching Systems Lab and MIT Playful Journey Lab, and still remains affiliated and actively collaborating with them. He also held industry appointments at Multimedia Vocento, Accenture and ExoClick, combining experience in academia, research institutions and business companies. He currently holds the prestigious Spanish fellowship Juan de la Cierva at the University of Murcia, within the department of Information and Communications Engineering.

His work lies within the intersection of data and human-computer interaction, where he has worked across numerous contexts like online learning, games, social networks or online advertising. He applies technology, analytical approaches and machine learning to understand human behavior and improve these contexts. He has experience over the entire data science process, from data capture, data tidying, feature engineering, analytics, machine learning and data-driven applications. He has received more than 15 academic and research awards, has published more than 50 scientific publications in high impact venues and participated in over 12 funded projects, including contracts, regional, national, European and international ones. He is passionate about how learning occurs, solving data-based problems, teaching and sharing knowledge, yoga, nature and photography.

Education

Academic

Massachusetts Institute of Technology	**Boston**
Postdoctorate (P.D.) in Learning Analytics in MOOCs and Games for Learning	*2018–2019*
Universidad Carlos III of Madrid	**Madrid**
Doctor of Philosophy (Ph.D.) in Telematics, Cum Laude, International Doctorate	*2014–2017*
Universidad Carlos III of Madrid	**Madrid**
Master of Science (M.Sc.), Telematics Engineering, GPA: 8,48/10	*2013–2014*
Universidad Carlos III of Madrid	**Madrid**
Master of Engineering (M.Eng.), Telecommunication Engineering, Highest GPA	*2011–2013*
Universidad Católica San Antonio of Murcia	**Murcia**
Bachelor of Engineering (B.Eng.) in Telecommunication Systems, Highest GPA	*2007–2010*

Experience

Research & Academia Appointments

University of Murcia	**Murcia**
Juan de la Cierva Researcher	*07/2019 – Present*
Massachusetts Institute of Technology (MIT)	**Cambridge (MA)**
Postdoctoral Associate	*04/2018 – 06/2019*
ExoClick	**Barcelona**
Data Scientist	*05/2017 – 03/2018*
Institute IMDEA Networks and Universidad Carlos III of Madrid	**Madrid**
Research Assistant and PhD candidate	*01/2014 – 05/2017*
Universidad Carlos III of Madrid	**Madrid**
Research Assistant	*07/2012 – 01/2014*
Universidad Católica San Antonio of Murcia	**Murcia**
Research Intern	*03/2010 – 06/2010*

Honorary & Visiting Positions

Massachusetts Institute of Technology (MIT)	**Cambridge (MA)**
Research Affiliate	*07/2019 – Present*
University of Edinburgh	**Edinburgh**
Visiting Researcher	*09/2016 – 12/2016*
Massachusetts Institute of Technology (MIT)	**Cambridge (MA)**
Visiting Researcher	*06/2015 – 9/2015*

Industry

Accenture Technology Solutions	**Madrid**
Software Engineer	*12/2010 – 09/2011*
Multimedia Communications Vocento	**Murcia**
TV and Radio Technical Intern	*06/2010 – 12/2010*

Awards, Honors and Fellowships

Awards

- Outstanding Young Computer Science Researcher for my contributions to artificial intelligence and data analytics to understand human behavior in online educational environments issued by the Spanish Computer Science Association (SCIE) and BBVA Foundation [country-wide].
- My Ph.D. thesis has received the following four awards:
    - Best PhD thesis award in "Technology and Education" sponsored by Telefonica Foundation, granted by the Official College of Telecommunications Engineers [country-wide].
    - Extraordinary Doctoral Award from Universidad Carlos III of Madrid to one of the best Ph.D. Thesis in Telematics Engineering during years 2016-2018 [degree-wide].
    - Award of the Spanish Chapter of the IEEE Education Society for Best doctoral thesis in technological applications in the field of education [country-wide].
    - eMadrid 2018 award to the best PhD thesis in research or development of educational technologies [country-wide].
- Received an Excellent Alumni award for my excellent career development issued by the Social Council of Universidad Carlos III of Madrid [university-wide].
- Collaborator at the Best Pedagogical Innovation Project Award at UC3M [university-wide].
- My M.Eng. thesis has received four awards:
    - Best final degree or MT Award "in new services, applications and digital business models" sponsored by Accenture, granted by COIT-AEIT [country-wide]
    - Award of the Spanish Chapter of the IEEE Education Society for Best final degree project or MT in technological applications in the field of education [country-wide]
    - eMadrid 2015 Award for Best final degree project or MT on research or development of educational technologies [country-wide]
    - Accenture Award for best MT in Telecommunications Engineering in the academic year 2012/2013 at the Universidad Carlos III de Madrid [degree-wide].
- M.Eng. Telecommunications Engineering - Outstanding Graduate of the Year Award and Best Academic Transcript (2011-2013) [degree-wide].
- B.Eng. in Telecommunication Systems - Outstanding Graduate of the Year Award and Best Academic Transcript (2006-2010) [degree-wide].

Honors

- The newspaper La Verdad de Murcia recognizes me as one of the 20 most noteworthy persons from Murcia (1.5 million inhabitants) in 2018 due to my accomplishments during the year [region-wide].

Scholarships & Fellowships

- Juan de la Cierva 'Formación' competitive fellowship from the Ministry of Science, Innovation and Universities of Spain (acceptance rate below 10%) (2019).
- Data Consortium Fellowship from the University of Wisconsim-Madison ($1.500) (2018).
- Scholarship from EATEL to assist to the 12th Joint European Summer School on Technology Enhanced Learning in Estonia (2016).
- I earned a full fellowship (all fees and salary included) from Institute IMDEA Networks to conduct my MSc and PhD in Telematics Engineering (total package of around €150.000 over 5 years) (2014).

Paper Awards and Nominations

- Bester poster award of LAK 19 conference for paper [C17].

- Paper [J6] was featured by Wiley as one of the best papers in 2017 from Wiley journals.
- Honorable Mention at ACM Learning at Scale 2016 for paper [C12].
- Runner up to the best demonstration paper award for paper [C8] at EC-TEL 2015.
- Paper [C6] was nominated for best full paper award at EC-TEL 2014.

Media Coverage and Press

Some news talking about me or my work:
- Interview in newspaper 'La verdad' - Link
- News about awards and stuff: University UCAM – eMadrid network – Murcia.com IMDEA Networks 1 – IMDEA Networks 2
- Popular TV Murcia interview - Video
- Young CS Researcher Awards: Video – FBBVA – SCIE – La Vanguardia – Europa Press – EFE Futuro – Economista – The Objective – Expansion
- Interview for MIT Open Learning - Link
- Onda Cero Radio interview - Link
- Interview for BBVA Foundation - Link
- Interview as one of the 20 most noteworthy persons from Murcia in 2018 - Link
- Several international press talking about our article [J13]: Harvard Magazine – EdSurge – e-Literate – InsideHighered – El Mercurio – Science Presse – University World News – Financial Times
- Our research about bots in Twitter in 2019 Spanish Elections - 20 Minutos – Agencia Sinc – El Espanol – Europa Press – Genbeta – La Razon – La Sexta – La Vanguardia – La Verdad – Nueva Tribuna – University of Murcia – El País
- Several interviews and press realeases about two projects MIT-Spain "la Caixa" projects - University of Murcia – La Verdad – 20 minutos – La Vanguardia

Publications

Google Scholar – ResearchGate – ORCID – ResearcherID – Publons – Scopus – dblp.

Overview..

Current summary of publications include 22 articles in journals, 22 publications in proceedings from international conferences, 4 publications in workshop proceedings, 3 book chapters and 2 edited volumes.

Journals..

JXX Pastor-Galindo, J., Zago, M., Nespoli, P., Lopez Bernal, S., Huertas Celdrán, A., Gil Pérez, M., **Ruipérez-Valiente, J. A.**, Martínez Pérez, G., & Gómez Mármol F. (2020). Spotting political social bots in Twitter: A use case of the 2019 Spanish general election – pre-print.

J22 Huertas Celdrán, A., **Ruipérez-Valiente**, J.A., García Clemente, F.J., Rodríguez-Triana, M.J., Shankar, S.K. and Martínez Pérez, G. A Scalable Architecture for the Dynamic Deployment of Multimodal Learning Analytics Applications in Smart Classrooms. Sensors 2020, 20, 2923 – download - ext link.

J21 Domínguez Figaredo, D., Reich, J. & **Ruipérez-Valiente, J. A.** (2020). Learning analytics and data-driven education: a growing field (Analítica del aprendizaje y educación basada en datos: un campo en expansión). Revista Iberoamericana de Educación a Distancia (RIED), 23(2) –

download English - download Spanish - ext link English - ext link Spanish.

J20 Loro-Garcia, F., Garcia S., **Ruipérez-Valiente, J. A.**, San Cristobal, E. and Castro M. (2020). Reviewing and Analyzing Peer Review Inter-Rater Reliability in a MOOC Platform. Computers & Education, 103894 – download - ext link.

J19 **Ruipérez-Valiente, J. A.** (2020). El Proceso de Implementación de Analíticas de Aprendizaje (The Implementation Process of Learning Analytics). Revista Iberoamericana de Educación a Distancia (RIED), 23(2) – ext link.

J18 **Ruipérez-Valiente, J. A.**, Gaydos, M., Rosenheck L., Kim Y.J., & Klopfer E. (2020). Patterns of Engagement in an Educational Massive Multiplayer Online Game: A Multidimensional View (In press). IEEE Transactions on Learning Technologies – download - ext link.

J17 Littenberg-Tobias, J., **Ruipérez-Valiente, J. A.**, & Reich, J. (2020). Studying Learner Behavior in Online Courses With Free-Certificate Coupons: Results From Two Case Studies (2020). In International Review of Research in Open and Distributed Learning, 21(1), pages 1-22. – download - ext link.

J16 Belmonte, F. J., Martin, S., Sancristobal E., **Ruipérez-Valiente, J. A.** & Castro M. (2020). Overview of embedded systems to build reliable and safe ADAS and AD systems. IEEE Intelligent Transportation Systems Magazine (In press) – download - ext link.

J15 **Ruipérez-Valiente, J. A.**, Halawa S., Slama R. & Reich, J. (2020). Using multi-platform learning analytics to compare regional and global MOOC learning in the Arab world. In Computers & Education, 103776 – download - ext link.

J14 Alexandron, G., Yoo, L. Y., **Ruipérez-Valiente, J. A.**, Lee, S., & Pritchard, D. E (2019). Are MOOC Learning Analytics Results Trustworthy? With Fake Learners, They Might Not Be! In International Journal of Artificial Intelligence in Education, 9(4), pages 484-506. Springer International Publishing – download – ext link.

J13 Reich, J. and **Ruipérez-Valiente, J. A.**. The MOOC Pivot. Science 363(6423), pages 130-131. 2019. Impact factor as of 2018: 41.058, JCR(2/64), Q1, category: multidisciplinary sciences – download - ext link.

J12 **Ruipérez-Valiente, J. A.**, Muñoz-Merino, P. J., & Delgado Kloos, C. Improving the prediction of learning outcomes in educational platforms including higher level interaction indicators. Expert Systems, 35(6) (2018). Impact factor as of 2017: 1.430, JCR(48/103), Q2, category: computer science, theory & methods – download - ext link.

J11 **Ruipérez-Valiente, J. A.**, Muñoz-Merino, P. J., Alexandron, G., and Pritchard, D. E. Using Machine Learning to Detect "Multiple-Account" Cheating and Analyze the Influence of Student and Problem Features. IEEE Transactions on Learning Technologies, 12(1), pages 112-122 (2017). Impact factor as of 2017: 1.869, JCR(64/238), Q2, category: education & educational research – download - ext link.

J10 Muñoz-Merino, P. J., Méndez Rodríguez, E., Delgado Kloos, C., & **Ruipérez-Valiente, J. A.** (2017). Design, Implementation and Evaluation of SPOCs at the Universidad Carlos III de Madrid. Journal of Universal Computer Science, 23(2), 167–186. Impact factor as of 2017: 1.066, JCR(66/104), Q3, category: computer science, theory & methods – download - ext link.

J9 **Ruipérez-Valiente, J. A.**, Muñoz-Merino, P. J., & Delgado Kloos, C. (2017). Detecting and Clustering Students by their Gamification Behavior with Badges: A Case Study in Engineering Education. The International Journal of Engineering Education, 33(2), 816–830. Impact factor as of 2016: 0.575, JCR(73/86), Q4, category: engineering, multidisciplinary – download - ext link.

J8 Alexandron, G.[†], **Ruipérez-Valiente, J. A.**[†], Chen, Z., Pedro J. Muñoz-Merino, & Pritchard, D. E. ([†]same author contribution, 2017) Copying@Scale: Using Harvesting Accounts for Collecting

Correct Answers in a MOOC. Computers & Education, 108, 96–114. Impact factor as of 2016: 4.538, JCR(7/105), Q1, category: computer science, interdisciplinary applications – download - ext link.

J7 **Ruipérez-Valiente, J. A.**, Muñoz-Merino, P. J., Pijeira Díaz, H. J., Santofimia Ruiz, J., & Delgado Kloos, C. (2017). Evaluation of a Learning Analytics Application for Open edX Platform. Computer Science and Information Systems, 14(1), 51–73. Impact factor as of 2017: 0.613, JCR(93/104), Q4, category: computer science, software engineering – download - ext link.

J6 Muñoz-Merino, P. J., **Ruipérez-Valiente, J. A.**, Delgado Kloos, C., Auger, M. A., Briz, S., Castro, V. De, & Santalla, S. N. (2017). Flipping the Classroom to Improve Learning with MOOCs Technology. Computer Applications in Engineering Education, 25(1), 15–25. Impact factor as of 2017: 1.153, JCR(50/86), Q3, category: engineering, multidisciplinary – download - ext link.

J5 **Ruipérez-Valiente, J. A.**, Muñoz-Merino, P. J., Gascón-Pinedo, J. A., & Delgado Kloos, C. (2017). Scaling to Massiveness with ANALYSE: A Learning Analytics Tool for Open edX. IEEE Transactions on Human-Machine Systems, 47(6), 909-914. 2017. Impact factor as of 2017: 2.563, JCR(6/22), Q1, category: computer science, cybernetics – download - ext link.

J4 **Ruipérez-Valiente, J. A.**, Muñoz-Merino, P. J., Delgado Kloos, C., Niemann, K., Scheffel, M., & Wolpers, M. (2016). Analyzing the Impact of Using Optional Activities in Self-Regulated Learning. IEEE Transactions on Learning Technologies, 9(3), 231–243. Impact factor as of 2016: 2.267, JCR(27/235), Q1, category: education & educational research – download - ext link.

J3 Muñoz-Merino, P. J., **Ruipérez-Valiente, J. A.**, Alario-Hoyos, C., Pérez-Sanagustín, M., & Delgado Kloos, C. (2015). Precise Effectiveness Strategy for analyzing the effectiveness of students with educational resources and activities in MOOCs. Computers in Human Behavior, 47, 108–118. Impact factor as of 2015: 2.88, JCR(21/129), Q1, category: psychology, multidisciplinary – download - ext link.

J2 Leony, D., Muñoz-Merino, P. J., **Ruipérez-Valiente, J. A.**, Pardo, A., Martín-Caro, D. A., & Delgado Kloos, C. (2015). Detection and evaluation of emotions in Massive Open Online Courses. Journal of Universal Computer Science, 21(5), 638–655. Impact factor as of 2015: 0.546, JCR(89/106), Q4, category: computer science, software engineering – download - ext link.

J1 **Ruipérez-Valiente, J. A.**, Muñoz-Merino, P. J., Leony, D. & Delgado Kloos, C. 2015. ALAS-KA: A learning analytics extension for better understanding the learning process in the Khan Academy platform. Computers in Human Behavior. 47, 139–148. Impact factor as of 2015: 2.88, JCR(21/129), Q1, category: psychology, multidisciplinary – download - ext link.

International Conferece Proceedings...

C22 **Ruipérez-Valiente, J. A.**, Jenner, M., Staubitz, T., Li, X., Rohloff, T., Halawa, S., Turro, C., Cheng, Y., Zhang, J., Despujol, I. & Reich, J. 2020. Macro MOOC Learning Analytics: Exploring Trends Across Global and Regional Providers. Proceedings of the 10th International Learning Analytics and Knowledge Conference (LAK'20) (pp. 518-523). Frankfurt, Germany. – download – ext link – presentation.

C21 Alexandron, G., Wiltrout, M.E., Berg, A. & **Ruipérez-Valiente, J. A.**. 2020. Assessment that matters: Balancing reliability an learner-centered pedagogy in MOOC assessment. Proceedings of the 10th International Learning Analytics and Knowledge Conference (LAK'20) (pp. 512-517). Frankfurt, Germany – download – ext link.

C20 Alexandron, G., **Ruipérez-Valiente, J. A.**, & Pritchard, D. E. Towards a General Purpose Anomaly Detection Method to Identify Cheaters in Massive Open Online Courses. Proceedings of the 12th international conference on educational data mining (pp. 480-483). Montreal, Canada.

2019. download – ext link.

C19 Littenberg-Tobias, J., **Ruipérez-Valiente, J. A.**, & Reich, J. Impact of Free-Certificate Coupons on Learner Behavior in Online Courses: Results from Two Case Studies. Proceedings of the Sixth ACM Conference on Learning @ Scale (L@S'19). Article No. 41. Chicago (IL), USA. 2019. download – ext link.

C18 **Ruipérez-Valiente, J. A.**, Halawa S. & Reich, J. Multiplatform MOOC Analytics: Comparing Global and Regional Patterns in edX and Edraak. Proceedings of the Sixth ACM Conference on Learning @ Scale (L@S'19). Article No. 3. Chicago (IL), USA. 2019. download – ext link.

C17 Kim Y.J., **Ruipérez-Valiente, J. A.**, Tan P., Rosenheck L. & Klopfer E. Towards a Process to Integrate Learning Analytics and Evidence-Centered Design for Game-based Assessment. In Companion Proceedings of the 9th International Learning Analytics and Knowledge Conference (LAK'19). Tempe (AZ), USA. 2019. download – ext link.

C16 **Ruipérez-Valiente, J. A.** & Reich J. Participation of the Arab World in MOOCs. Learning with MOOCs. In Learning With MOOCS (LWMOOCS) (pp. 47-50). IEEE. Madrid, Spain. 2018 – download – ext link.

C15 Alexandron, G., **Ruipérez-Valiente, J. A.**, Lee, S., & Pritchard, D. E (2018). Evaluating the Robustness of Learning Analytics Results Against Fake Learners. In Proceedings of the 13th European Conference on Technology Enhanced Learning (pp. 74-87). Springer International Publishing – download - ext link.

C14 **Ruipérez-Valiente, J. A.**, Cobos, R., Muñoz-Merino, P. J., Andújar, A., & Delgado Kloos, C. (2017). Early Prediction and Variable Importance of Certificate Accomplishment in a MOOC. In Proceedings of the European Conference on Massive Open Online Courses (pp. 263–272). Springer International Publishing – download - ext link.

C13 **Ruipérez-Valiente, J. A.**, Joksimovic, S., Kovanovic, V., Gasevic, D., Muñoz-Merino, P. J., & Delgado Kloos, C. (2017). A Data-driven Method for the Detection of Close Submitters in Online Learning Environments. In Proceedings of the 26th International Conference on World Wide Web Companion (pp. 361–368). ACM. CORE Rank: A* – download - ext link.

C12 **Ruipérez-Valiente, J. A.**[†], Alexandron, G.[†], Chen, Z., & Pritchard, D. E. ([†]same author contribution, 2016). Using multiple accounts for harvesting solutions in MOOCs. In Proceedings of the Third ACM Conference on Learning@Scale (pp. 63–70) – download - ext link - video.

C11 **Ruipérez-Valiente, J. A.**, Muñoz-Merino, P. J., & Delgado Kloos, C. (2016). Analyzing students' intentionality towards badges within a case study using Khan academy. In Proceedings of the Sixth International Conference on Learning Analytics & Knowledge (pp. 536–537). ACM. Google Scholar h5-index factor: 32 – download - ext link.

C10 Pijeira Díaz, H. J., Santofimia Ruiz, J., **Ruipérez-Valiente, J. A.**, Muñoz-Merino, P. J., & Delgado Kloos, C. (2016). A Demonstration of ANALYSE: A Learning Analytics Tool for Open edX. In Proceedings of the Third ACM Conference on Learning@Scale (pp. 329–330). ACM. Google Scholar h5-index factor: 14 – download - ext link.

C9 **Ruipérez-Valiente, J. A.**, Muñoz-Merino, P. J., & Delgado Kloos, C. (2016). An analysis of the use of badges in an educational experiment. In Frontiers in Education Conference (pp. 1–8). IEEE. CORE Rank: B – download - ext link.

C8 Pijeira, H. J., Santofimia, J., **Ruipérez-Valiente, J. A.**, Muñoz-Merino, P. J., & Delgado Kloos, C. (2015). Using Video Visualizations in Open edX to Understand Learning Interactions of Students. In 10th European Conference on Technology Enhanced Learning (pp. 522–525). Springer International Publishing. Google Scholar h5-index factor: 16 – download - ext link - video.

C7 **Ruipérez-Valiente, J. A.**, Muñoz-Merino, P. J., & Delgado Kloos, C. (2015). A Predictive Model of Learning Gains for a Video and Exercise Intensive Learning Environment. In International Conference on Artificial Intelligence in Education (pp. 760–763). Springer International Publishing. CORE Rank: A – download - ext link.

C6 **Ruipérez-Valiente, J. A.**, Muñoz-Merino, P. J., Delgado Kloos, C., Niemann, K., & Scheffel, M. (2014). Do Optional Activities Matter in Virtual Learning Environments? In Ninth European Conference on Technology Enhanced Learning (pp. 331–344). Springer International Publishing. Google Scholar h5-index factor: 16 – download - ext link.

C5 Delgado Kloos, C., Muñoz-Merino, P. J., Muñoz-Organero, M., Alario-Hoyos, C., Pérez-Sanagustin, M., Parada G., H. A., **Ruipérez-Valiente, J. A.**, Sanz, J. L. (2014). Experiences of running MOOCs and SPOCs at UC3M. In IEEE Global Engineering Education Conference, EDUCON (pp. 884–891) – download - ext link.

C4 Santofimia Ruiz, J., Pijeira Díaz, H. J., **Ruipérez-Valiente, J. A.**, Muñoz-Merino, P. J., & Delgado Kloos, C. (2014). Towards the Development of a Learning Analytics Extension in Open edX. In Proceedings of the Second International Conference on Technological Ecosystems for Enhancing Multiculturality (pp. 299–306) – download - ext link.

C3 **Ruipérez-Valiente, J. A.**, Muñoz-Merino, P. J., & Delgado Kloos, C. (2014). A demonstration of ALAS-KA: A learning analytics tool for the Khan Academy platform. In 9th European Conference on Technology Enhanced Learning (EC-TEL 2014) (pp. 518–521) – download - ext link.

C2 **Ruipérez-Valiente, J. A.**, Muñoz-Merino, P. J., & Delgado Kloos, C. (2013). An architecture for extending the learning analytics support in the Khan Academy framework. In Proceedings of the First International Conference on Technological Ecosystem for Enhancing Multiculturality (pp. 277–284) – download - ext link.

C1 Muñoz-Merino, P. J., **Ruipérez Valiente, J. A.**, & Kloos, C. D. (2013). Inferring higher level learning information from low level data for the Khan Academy platform. In Proceedings of the Third International Conference on Learning Analytics and Knowledge - LAK'13 (pp. 112–116) – download - ext link.

Workshops Proceedings...

W4 Martinez, P. A., Gomez, M. J., **Ruipérez-Valiente, J. A.**, Martínez Pérez, G., & Kim, Y. J. (2020). Visualizing Educational Game Data: A Case Study of Visualizations to Support Teachers. In Learning Analytics Summer Institute Spain. CEUR Workshop Proceedings – download - ext link.

W3 Redondo, D., Muñoz-Merino, P. J., **Ruipérez-Valiente, J. A.**, Delgado Kloos, C., Pijeira Díaz, H. J., & Santofimia Ruiz, J. (2015). Combining Learning Analytics and the Flipped Classroom in a MOOC of maths. In International Workshop on Applied and Practical Learning Analytics (pp. 71–79). CEUR Workshop Proceedings – download - ext link.

W2 Muñoz-Merino, P. J., **Ruipérez-Valiente, J. A.**, Alario-Hoyos, C., Pérez-Sanagustín, M., & Kloos, C. D. (2014). Analítica del Aprendizaje para la Evaluaci**Ruipérez-Valiente, J. A.**n Precisa de la Efectividad del Alumno con Actividades y Recursos Educativos. In Proceedings of the 9th Iberian Conference on Information Systems and Technologies (CISTI 2014) (pp. 1–6) – download - ext link.

W1 Leony, D., Muñoz-Merino, P. J., Pardo, A., **Ruipérez-Valiente, J. A.**, Martín-Caro, D. A., & Kloos, C. D. (2014). Rule-based detection of emotions in the Khan Academy platform. In Proceedings of the 5th Congreso Internacional sobre Calidad y Accessibilidad de la Formacion Virtual (CAFVIR 2014). International Workshop on Massive Open Online Courses (pp. 556–562). Antigua, Guatemala – download - ext link.

Book Chapters..

B3 **Ruipérez-Valiente, J. A.**, Rosenheck L. & Kim Y.J. What Does Exploration Look Like? Painting a Picture of Learning Pathways Using Learning Analytics. In Game-Based Assessment Revisited. Advances in Game-Based Learning. (pp. 281-300). Springer. ISBN 978-3-030-15569-8 – download - ext link.

B2 **Ruipérez-Valiente, J. A.**, Muñoz-Merino, P. J., & Delgado Kloos, C. (2015). Diseño e Implementación de un Módulo de Analítica de Aprendizaje, y su Aplicación para la Evaluación de Experiencias Educativas. In TICs para el Aprendizaje de la Ingeniería (TICAI) (pp. 77–84). ISBN 978-84-8158-711-1 – download - ext link.

B1 Muñoz-Merino, P. J., **Ruipérez-Valiente, J. A.**, Moreno, J. L. S., & Kloos, C. D. (2015). Assessment activities in massive open on-line courses: Assessment activities in MOOCs. In Furthering higher education possibilities through massive open online courses (pp. 165-192). IGI Global. – download - ext link.

Edited Volumes..

E2 Calise, M., Delgado Kloos, C., Reich, J., **Ruipérez-Valiente, J. A.**, Shimshon, G., Staubitz, T., and Wirsing M. (2019). EMOOCs 2019 Work in Progress Papers of Research, Experience and Business Tracks (EMOOCs-WIP 2019). Naples, Italy, May 20-22, 2019. CEUR-WS. ISSN 1613-0073. URN – ext link.

E1 Calise, M., Delgado Kloos, C., Reich, J., **Ruipérez-Valiente, J. A.**, and Wirsing M. (2019). Digital Education: At the MOOC Crossroads Where the Interests of Academia and Business Converge. 6th European MOOCs Stakeholders Summit, EMOOCs 2019, Naples, Italy, May 20-22, 2019. LNCS 11475. Springer. ISBN 978-3-030-19874-9. doi – ext link.

Scientifc Dissemination..

D1 **Ruipérez-Valiente, J. A.** ¿Deben los gobiernos poner límites a la inteligencia artificial? (Should governments regulate artificial intelligence?) The Conversation ES. link.

Participation in Events

Invited Talks..

I6 Understanding students in digital education through learning analytics - Seminar on Educational Innovations SINNE at the University of Cauca – video - link.

I5 Plenary Round Table - The Scalability of Online Degrees at EMOOCs 2019 conference – program - link.

I4 Research in Learning Analytics vs. Learning Analytics in the University (2019). The challenge of digitalizing the university. Artificial intelligence and the personalization of learning – program - video.

I3 Design and Implementation of a Learning Analytics Module for the Khan Academy Platform (2015). 2nd World Congress on Systems Engineering and Information Technology, WCSEIT'15.

I2 Design and Implementation of a Learning Analytics Module for the Khan Academy Platform. V eMadrid Workshop – video.

I1 ALASKA A Learning Analytics Tool for the Khan Academy Platform. Local-Learning Analytics Summer Institute – video.

Refereed Presentations without Proceedings..

P5 **Ruipérez-Valiente, J. A.**, Kim Y.J., Tan P., Rosenheck L. and Klopfer E. (2019). Can Learning Analytics Generate Trustworthy Assessment on a Geometry Game? In LAK Hackathon 2019: Trusted and Inclusive Learning Analytics Across Spaces with New Tools, Standards and Infrastructures

P4 **Ruipérez-Valiente, J. A.** and Reich J (2018). Poster presentation of Patterns of Participation of the Arab World in MITx MOOC Portfolio. Festival of Learning. London, UK.

P3 Alexandron, G., **Ruipérez-Valiente, J. A.**, & Pritchard, D. E. (2015). Evidence of MOOC Students Using Multiple Accounts to Harvest Correct Answers. In Learning with MOOCs II: A Workshop for Practitioners: New Approaches to Teaching & Learning. New York City (NY), USA – video.

P2 **Ruipérez-Valiente, J. A.**, Muñoz-Merino, P. J., & Delgado Kloos, C. (2015). ANALYSE: A Learning Analytics Tool for Open edX. The Open edX Conference. Welleslay (MA), USA – video

P1 Kloos, C. D., Muñoz-merino, P. J., **Ruipérez-Valiente, J. A.**, Auger, M. A., Briz, S., Castro, V. De, & Santalla, S. N. (2014). A Successful Learning Experience using SPOCs. In Learning with MOOCs: A Practitioner's Workshop. Boston (MA), USA – video.

Teaching

Undergraduate...

- Object Oriented Programming. University of Murcia (Spring 2020; Spring 2021)
- Research and Quantitative Analysis II: Big Data. University of Murcia (Fall 2019; Fall 2020)

Undergraduate and Graduate Courses..

- CMS.594/CMS.894 Education Technology Studio. Massachusetts Institute of Technology (Spring 2019; Fall 2020).

Online Teaching..

- Education Technology Studio. MIT OpenCourseware (Spring, 2019) – link.
- MOOC on Digital Electronics. UNED COMA platform (1st edition, 2nd edition, special edition)
- MOOC on Foundations to Open Education and OER. UNED COMA platform (1st edition).

Student Evaluation Committees...

- PhD Thesis Committee member of Daniel Pérez Berenguer. PhD in Computer Science. Universidad de Murcia (2020).
- PhD Thesis Committee member of Daniel Alberto Jaramillo Morillo. PhD in Telematics Engineering. Universidad del Cauca (2018).

Invited Seminars...

- Seminar on 'Understanding Students through Learning Analytics in the Digital Era: Case Studies in MOOCs and Games for Learning' – For the PhD Program at Universidad of Valladolid (2 hours, 2020, Valladolid, Spain)
- Seminar on 'From Academia to Industry and Back to Academia: How to Survive [and Succeed] in your Career Pathway' – For the PhD Program at Universidad of Valladolid (1.5 hour, 2020, Valladolid, Spain)
- Seminar on 'Learning Analytics for the Evaluation of Competencies and Behaviors in Serious Games' – For the PhD Program at Universidad Complutense of Madrid (1 hour, 2019, Madrid, Spain).

- o Seminar on 'Detection and impact of fake learners in Massive Open Online Courses' at HEC Paris (1.5 hour, January 8, 2019, Paris, France).
- o Seminar on 'Detection and impact of fake learners in Massive Open Online Courses' at Institute IMDEA Networks (1 hour, October 29, 2018, Madrid, Spain).

Workshops & Trainings

- o Workshop on Learning analytics design in game-based learning at JTEL Summer School 2019 (3 hours, June 5, Bari, Italy).
- o Training on 'Network Analysis' at business company ExoClick (4 hours, 2017, Barcelona, Spain).
- o Training on 'How to make data work for you' at business company ExoClick (4 hours, 2017, Barcelona, Spain).

Advising & Mentoring

Current students:
- o Graduate Students:
  - Marta Expósito Ventura. PhD Telematics Engineering at Univèrsitat Politecnica de Catalunya. Thesis "Contributions toward a better online advertising ecosystem"
  - Daniel Alberto Jaramillo Morillo. PhD in Telematics Engineering. Universidad del Cauca. Thesis "Characterizing Academic Dishonesty in Massive Private Online Courses (MPOC) with Academic Recognition through Learning Analytics"
  - Sergio Rubio Menor. MSc in Big Data Technologies. Universidad de Murcia.
- o Undergraduate Students:
  - Manuel Jesús Gómez Moratilla. BEng in Computer Science. Universidad de Murcia.
  - Pedro Antonio Martínez Sánchez. BEng in Computer Science. Universidad de Murcia.
  - Jose Ramón Guillén López. BEng in Computer Science. Universidad de Murcia.

Past students:
- o César Ugarte Cerrato. MEng Telecommunications at Universidad Carlos III of Madrid. Thesis "Design and implementation of a learning analytics toolkit for Open edX" (2016).

Specific Teaching Training Received

- o MIT Kaufman Teaching Certificate Program (2018).

Other Activities

- o Scientific dissemination with activity organization "Interactive activity about energy consumption" as part of ODSesiones at the University of Murcia (8 hours, 2019).
- o Scientific dissemination activity organization "Gincana del diente azul" on the Week of the Science and Technology of Murcia (19 hours, 2009).
- o Scientific dissemination activity organization "Contempla el mundo a cámara lenta" on the Week of the Science and Technology of Murcia (22 hours, 2008).

Professional Service

Chairs or Senior Committee

- o Steering Committee Member of Learning with MOOCs 2019–2020
- o Steering Committee Member of Learning @ Scale 2019–2020
- o Program Track Co-Chair European Conference on MOOCs 2019

Technical Program Committee (TPC)

- o TPC Immersive Learning Research Network (iLRN) 2020

- TPC Member European Conference on Technology-enhanced Learning (ECTEL) 2020
- TPC Member EATEL Summer School on Technology Enhanced Learning (JTELSS) 2020
- TPC Member of the International Conference on Education and Technology in Sciences (CISETC) 2020
- TPC Member of the International Conference on Human and Social Analytics (HUSO) 2020
- TPC Member of Learning Analytics and Knowledge (LAK) conference 2020
- TPC Member of Culturally Inclusive Learning Analytics Workshop (CILA) 2019
- TPC Member of AdKDD Workshop 2019–2020
- TPC Member Artificial Intelligence in Education (AIED) 2019–2020
- TPC Member MIT LINC Conference 2019
- TPC Member IEEE Conference on Teaching, Assessment and Learning for Engineering (TALE) 2018–2020

Grant Evaluator

- Israel Science Foundation (ISF)

Journal Reviewer

I have performed ad-hoc reviews as an expert for more than 20 journals:
1. Journal of Behavior and Information Technology
2. IEEE Transactions on Learning Technologies
3. Journal of Learning Analytics
4. Computers in Human Behavior
5. EURASIA Journal of Mathematics, Science and Technology Education
6. Journal of Universal Computer Science
7. Applied Soft Computing
8. IEEE Journal of Latin-American Learning Technologies
9. Journal of Interactive Media in Education
10. Knowledge-Based Systems
11. IEEE Access
12. Estudios sobre educación
13. MDPI Sociel Sciences
14. Revista Iberoamericana de Educación a Distancia
15. Science Advances
16. MDPI Sustainability
17. MDPI Future Internet
18. MDPI Computation
19. MDPI Sensors
20. Journal of Business Research
21. British Journal of Educational Technology
22. MDPI Electronics
23. Computers & Education
24. Journal of Computer Assisted Learning

External Reviewer

- Connected Learning Submit 2020
- Solve's Challenge 2018
- ACM CHI Conference on Human Factors in Computing Systems 2018
- Learning Analytics and Knowledge Conference 2016

- ○ Australasian Society for Computers in Learning in Tertiary Education Conference 2016
- ○ Frontiers in Education Conference 2016
- ○ Learning with MOOCs 2015

- ○ Associated Editor Journal of the Iberoamerican Review of Digital Education Journal (RIED) 2020.
- ○ Editor of CEUR-WS.org, the biggest open and free online proceedings for scientific conferences and workshops on computer science, information systems and information technology. 2019–2020.
- ○ Guest Editor for Special Issue on "Learning Analytics & Data-driven Education" in the Iberoamerican Review of Digital Education Journal (RIED).
- ○ Guest Editor for Special Issue on "The Role of Sensors, Wearables, and IoT Devices in Learning Analytics and Educational Data Mining" in Sensors journal.

Academic Service...

- ○ PhD student representative in the Telematics Engineering Department from 2014-2016

Event Organization...

- ○ Global Learning @ Scale Workshop co-held with the 2020 Learning @ Scale Conference. Atlanta (USA).
- ○ Co-organizer of the LAKathon2020: The 6th Learning Analytics Hackathon. Frankfurt (Germany)

Projects

Selected projects where I have participated:

European Research Projects..

- ○ **Project Name**: PALANTIR - Practical Autonomous Cyberhealth for resilient SMEs & Microenterprises (H2020-SU-DS-2019, 883335)
  - – **Duration**: 2020-09-01 – 2023-08-31
  - – **Funding agency**: European Commission
  - – **Partners**: DBC EUROPE (Belgium), Infili Technologies (Greece), Fundacio i2cat (Spain), Universidad de Murcia (Spain), Space Hellas Anonymi Etaireia Systimata Kai Ypiresies Tilepikoinoionpliroforikis Asfaleias (Greece), Hewlett-Packard Limited (UK), NEC Laboratories Europe GMBH (Germany), Telefónica Investigación y Desarrollo (Spain), Politecnico Di Torino (Italy), Incites Consulting SARL (Luxembourg), National Center for Scientific Research "Demokritos" (Greece), Orion Innovations (Greece), Ubitech Limited (Cyprus), Sfera IT Storitve Doo (Slovenia), Stratiotiki Sxoli Evelpidon (Greece).
  - – **Role**: Researcher.
  - – **Budget**: €5,267,976.25
- ○ **Project Name**: 5GZORRO - Zero-Touch Security and Trust for Ubiquitous Computing and Connectivity in 5G Networks (H2020-ICT, 871533)
  - – **Duration**: 2019-11-01 – 2022-04-30
  - – **Funding agency**: European Commission
  - – **Partners**: Fundació i2CAT (Spain), Universidad de Murcia (Spain), Telefónica Investigación y Desarrollo (Spain), Nextworks (Italy), Intracom (Greece), Ubiwhere LDA (Portugal), Bartr Holding Limited (UK), Comunicare Digitale APS (Italy), Malta Communication Authority (Malta), Fondazione Bruno Kessler (Italy), IBM Israel Science & Technology Ltd (Israel), Altice Lab (Portugal), ATOS (Spain).

- **Role**: Researcher.
- **Budget**: €4,999,965.00

International Research Projects...

o **Project Name**: Using Learning Analytics in Games for Learning for the Evaluation of Key Competences for the 21st Century
  - **Duration**: 2020-01-01 – 2021-08-01
  - **Funding agency**: MIT-Spain - "la Caixa" Foundation Seed Fund. MIT International Science and Technology Initiatives (MISTI) program.
  - **Partners**: Massachusetts Institute of Technology, Universidad de Murcia, Universidad Complutense de Madrid
  - **Role**: Principal investigator from Universidad de Murcia
  - **Budget**: $24,001.00
o **Project Name**: Global and Regional MOOC Learning Analytics Across Providers and Nationalities
  - **Duration**: 2020-01-01 – 2021-08-01.
  - **Funding agency**: MIT-Spain - "la Caixa" Foundation Seed Fund. MIT International Science and Technology Initiatives (MISTI) program.
  - **Partners**: Massachusetts Institute of Technology and Universidad de Murcia.
  - **Role**: Principal investigator from Universidad de Murcia.
  - **Budget**: $22,936.00.

National Research Projects...

o **Project Name**: SAFEMAN: A unified management framework for cybersecurity and safety in the manufacturing industry (RTI2018-095855-B-I00).
  - **Duration**: 2019-01-01 – 2021-12-31
  - **Funding agency**: Ministerio de Ciencia, Innovación y Universidades, España.
  - **Partners**: Universidad de Murcia
  - **Role**: Researcher
  - **Budget**: €161,051.00
o **Project Name**: EAGER: Reimagining Teachers' Assessment Literacy Using Game-Based Learning Analytics (#1935450)
  - **Duration**: 2019-08-15 – 2021-07-31.
  - **Funding agency**: National Science Foundation of the United States of America
  - **Partners**: Massachusetts Institute of Technology
  - **Role**: Researcher
  - **Budget**: $300,000.00
o **Project Name**: XQ Game-based Assessment Model: A call for continuous, ubiquitous and rigorous assessment
  - **Duration**: 2018-01-01 – 2022-01-01
  - **Funding agency**: US XQ Institute
  - **Partners**: Massachusetts Institute of Technology
  - **Role**: Researcher
o **Project Name**: International Patterns of Participation and Completion in Massive Open Online Courses
  - **Duration**: 2018-04-09 – 2019-06-30
  - **Funding agency**: MIT private funding
  - **Partners**: Massachusetts Institute of Technology and Harvard

- **Role**: Researcher
- **Project Name**: RESET: Reformulando ecosistemas escalables educativos (TIN2014-53199-C3-1-R)
  - **Duration**: 2015-01-01 – 2019-06-30
  - **Funding agency**: Ministerio de Economía, Industria y Competitividad
  - **Partners**: Universidad Carlos III de Madrid, Universidad de Valladolid, Universidad Pompeu Fabra
  - **Role**: Researcher
  - **Budget**: €136,900.00
- **Project Name**: EEE-Virtual: Orquestando espacios educativos especulares (TIN2011-28308-C03-01).
  - **Duration**: 2012-01-01 – 2015-07-31
  - **Funding agency**: Ministerio de Ciencia, Innovación y Universidades
  - **Partners**: Universidad Carlos III de Madrid, Universidad de Valladolid, Universidad Pompeu Fabra
  - **Role**: Researcher
  - **Budget**: €165,165.00

Regional Research Projects

- **Project Name**: eMadrid. Investigación y desarrollo de Tecnologías Educativas en la Comunidad de Madrid (S2013/ICE-2715)
  - **Duration**: 2014-10-01 – 2018-12-31
  - **Funding agency**: Comunidad de Madrid. Consejería de Educación e Investigación
  - **Partners**: Universidad Carlos III de Madrid, Universidad Autonoma de Madrid, Universidad Nacional Española Distancia, Universidad Politécnica de Madrid, Universidad Complutense de Madrid y Universidad de Alcala
  - **Role**: Researcher
  - **Budget**: €342,264.63
- **Project Name**: Investigación y desarrollo de tecnologías para el e-learning en la comunidad de Madrid (S2009/TIC-1650)
  - **Duration**: 2010-01-01 – 2014-05-31
  - **Funding agency**: Comunidad de Madrid
  - **Partners**: Universidad Carlos III de Madrid, Universidad Autonoma de Madrid, Universidad Nacional Española Distancia, Universidad Politécnica de Madrid, Universidad Complutense de Madrid y Universidad de Alcala
  - **Role**: Researcher
  - **Budget**: €524,511.18

R&D Contracts

- **Project Name**: INSURANCE: IoT and Sensors Networks Securization Using Artificial Intelligence.
  - **Duration**: 2020-03-20 – 2021-03-31
  - **Funding agency**: Federal Office for Defence Procurement Armasuisse
  - **Partners**: Universidad de Murcia and Federal Office for Defence Procurement Armasuisse
  - **Role**: Researcher
- **Project Name**: LAGA: Learning Analytics and Game-based Assessment
  - **Duration**: 2020-01-01 – 2022-12-31
  - **Funding agency**: Massachusetts Institute of Technology

- **Partners**: Universidad de Murcia and Massachusetts Institute of Technology
- **Role**: Researcher
o **Project Name**: SOUNDS: Securing communications in a distributed platform for spectrum measurements leveraging heterogeneous sensors
  - **Duration**: 2019-10-01 – 2019-11-30
  - **Funding agency**: Federal Office for Defence Procurement Armasuisse
  - **Partners**: Universidad de Murcia and Federal Office for Defence Procurement Armasuisse
  - **Role**: Researcher
o **Project Name**: Indra Cyber Range
  - **Duration**: 2019-07-11 – 2020-09-30
  - **Funding agency**: Indra Systems S.A.
  - **Partners**: University of Murcia and Indra Systems S.A.
  - **Role**: Researcher

Languages

English: Full professional proficiency.

Spanish: Native or bilingual proficiency.

Skills

Data science: Python, SQL, R, SPSS statistical analysis, applied machine learning

Full stack development: J2EE, Django, JavaScript, AJAX, metadata languages, web services, MySQL, Oracle, MongoDB, GAE, AWS.

Writing and presentation: Microsoft Office (Word, Power Point, Visio, Excel), LaTeX, Keynote, Photoshop, Inkscape.

Soft: Verbal and non-verbal communication, leadership, problem solving, critical thinking, self-management, creative, initiative, emotional intelligence.

Open Source Contributions

o ANALYSE (Add-on of learNing AnaLYtics Support for open Edx)
  - ANALYSE is learning analytics tool developed for Open edX. It extends its functionality with 12 new visualizations.
  - ANALYSE has received a lot of attention from different institutions, it was presented at the Open edX conference, received several wards and it was open sourced for the community (GitHub code link, video example)
  - Several publications are based on ANALYSE results (e.g. J6, J7, W5, C4, C8, C10)
o ALAS-KA (Add-on of the Learning Analytics Support for the Khan Academy)
  - ALAS-KA is a plug in for Khan Academy that incorporates 21 new visualizations that are accesible by teachers and students.
  - This tool has been open sourced (GitHub code link, video example) and has received interest from many institutions.
  - ALAS-KA was succesfully tested in educational experiences at Universidad Carlos III of Madrid.
  - A number of publications are based on its implementation and deployment (e.g. J1, B2, C1, C2, C3)

○ I developed an algorithm as part of publication [C13] to detect close submitters in online environments (i.e. users that tend to submit very close in time over a course due to potential academic dishonesty). This can help multiple account cheating and authorized collaborations (passing answers to other peers) in online environments. The algorithm is open source and available in this GitHub repo.

References

Some people I have worked with. More available upon request:
○ Massachusetts Institute of Technology: Prof. Justin Reich (jreich@mit.edu)
○ Universidad Carlos III of Madrid: Prof. Carlos Delgado Kloos (cdk@it.uc3m.es)
○ Monash University: Prof. Dragan Gašević (dgasevic@acm.org)
○ University of Murcia: Prof. Gregorio Martínez Pérez (gregorio@um.es)
○ Weizmann Institute of Science: Prof. Giora Alexandron (giora.alexandron@weizmann.ac.il)