

**MICHELLE PACIFICO-BANAWAN, Ph.D.**

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Summary of Professional Experience
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1. Assistant Director for Intelligent Systems (July 2025 – present)  
Learning Engineering Institute  
Arizona State University
2. Academic Program Director – BSDSBA (January, 2023 – June 2025)  
Aboitiz School of Innovation, Technology, and Entrepreneurship  
Asian Institute of Management  
City of Makati, Metro Manila
3. Post-doctoral Researcher (October, 2019 – February, 2023)  
SOLET lab Department of Psychology  
Arizona State University  
AZ, USA
4. Associate Professor – Ateneo de Davao University, Philippines (2007 – 2019)  
MIS Director

Assistant to the Academic Vice President

*Played an active role in curriculum and instructional design, academic policies formulation and implementation, and faculty development strategies.*

5. Board of Examiner and Question Contributor to the Question Formulation Meetings for Japan's IPA (Information Technoogy Promotion Agency) and the PhilNITS FE Exam (2015-2018)
6. Computer Programmer/ Systems Analyst (1998 – 2007)  
City Information Technology Center  
City Government of Davao, Philippines
7. Project Leader/ Systems Analyst MIS Department, JSGaisano (1996-1998)  
Davao City, Philippines
8. Computer Programmer – Philippine Database Services, Inc. (1994 – 1996)  
Shaw Boulevard Pasig City, Philippines

Education
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**Ph.D. in Computer Science**  
2013 - 2018  
Ateneo de Manila University  
Quezon City, Philippines

**Master of Science in Information Technology**  
2009 - 2011  
Ateneo de Davao University  
Davao City, Philippines

**Masters in Management**  
2002 - 2004  
University of the Philippines in Mindanao  
Davao City, Philippines

**Bachelor of Science in Computer Science**  
1988 - 1992  
Pamantasan Ng Lungsod Ng Maynila  
Metro Manila, Philippines

Scholarly Service and Peer Review
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1. *Interactive Learning Environments*
2. *Asia Pacific Journal of Education*
3. *SciEnggJ (Science and Engineering Journal)*
4. *Applied Soft Computing*
5. *Journal of Educational Data Mining*

Verified peer reviews recorded in Web of Science Reviewer Recognition Service (Publons) and pertinent reviewer hubs of these journals, including multiple rounds of review for manuscripts in AI, learning analytics, educational data mining, and applied machine learning.

Summary of Research and Publications for the Last 5 years
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1. **Banawan, M.**, Arner, T., & McNamara, D. S. (2026). A Predictive Learning Engineering Framework for Modeling Active Learning. In Craig, S. D., Arner, T., & McNamara, D. S. (Eds.), Proceedings of the Learning Engineering Research Network Convening (LERN 2026): From Insights to Implementation, Learning Engineering in Action. LERN Convention Proceedings.  
<https://doi.org/10.59668/2551.25362>

2. **Banawan, M.**, Huynh, L., Christhlf, K., & McNamara, D. S. (2026). Engineering a Semantic Topicality Instrument for Multiple-Choice Question Quality Control. In Craig, S. D., Arner, T., & McNamara, D. S. (Eds.), Proceedings of the Learning Engineering Research Network Convening (LERN 2026): From Insights to Implementation, Learning Engineering in Action. LERN Convention Proceedings. <https://doi.org/10.59668/2551.25371>
3. Chakraborty, S., Tian, Y., **Banawan, M.**, Potter, A., Huynh, L., Yajjapurapu, Y., & McNamara, D. S. (2026). Automated Run-on Sentence Detection and Correction for Educational Writing. In Craig, S. D., Arner, T., & McNamara, D. S. (Eds.), Proceedings of the Learning Engineering Research Network Convening (LERN 2026): From Insights to Implementation, Learning Engineering in Action. LERN Convention Proceedings. <https://doi.org/10.59668/2551.25361>
4. **Banawan, M.** (2025, September). Measuring Semantic Fidelity in Student Discussion Posts. In International Conference on Learning Evidence and Analytics.
5. **Banawan, M. P.**, Monterozo, C. J., & Rodrigo, M. M. T. (2024). Exploring linguistic sophistication of discussion board posts in university learning management systems. In A. Kashihara et al. (Eds.), Proceedings of the 32nd International Conference on Computers in Education. Asia-Pacific Society for Computers in Education. <https://doi.org/10.58459/icce.2024.4860>
6. Shin, J., Balyan, R., **Banawan, M. P.**, Arner, T., Leite, W. L., & McNamara, D. S. (2024). Analyzing interaction patterns and content dynamics in an online mathematics discussion board. *Interactive Learning Environments*, 1-24.
7. **Michelle Banawan**, Elias John Kukas, John Richard Tano, Adonna Tan, and Ramil Villegas. 2024. Transformative Approach to Fairness and Transparency in Classroom Participation Assessment. In Proceedings of the Eleventh ACM Conference on Learning @ Scale (L@S '24). Association for Computing Machinery, New York, NY, USA, 501-504. <https://doi.org/10.1145/3657604.3664708>
8. **Banawan, M.** 31st International Conference on Computers in Education, ICCE 2023 - Proceedings, 2023, 1, pp. 58-67. Composite Score for ChatGPT Prompt Efficiency: A Computational Linguistic Analysis of Engineered Chatbot Prompts
9. Shin, J., Balyan, R., **Banawan, M. P.**, Arner, T., Leite, W. L., & McNamara, D. S. (2023). Pedagogical discourse markers in online algebra learning: Unraveling instructor's communication using natural language processing. *Computers & Education*, 205, 104897.
10. Banawan, Michelle, Reese Butterfuss, Karen S. Taylor, Katerina Christhlf, Claire Hsu, Connor O'Loughlin, Laura K. Allen, Rod D. Roscoe, and Danielle S. McNamara. "The Future of Intelligent Tutoring Systems for Writing." In Digital

- Writing Technologies in Higher Education: Theory, Research, and Practice, pp. 365-383. Cham: Springer International Publishing, 2023.
11. Roscoe, R. D., Balyan, R., McNamara, D. S., **Banawan, M.**, & Schillinger, D. (2023). Automated strategy feedback can improve the readability of physicians' electronic communications to simulated patients. *International Journal of Human-Computer Studies*, 176, 103059.
  12. Banawan, M. P., Shin, J., Arner, T., Balyan, R., Leite, W. L., & McNamara, D. S. (2023). Shared Language: Linguistic Similarity in an Algebra Discussion Forum. *Computers*, 12(3), 53.
  13. Michelle **Banawan**, Jinnie Shin, Renu Balyan, Walter Leite, & Danielle McNamara. 2022. Math Discourse Linguistic Components. Cohesive Cues within a Math Discussion Board Discourse. In Proceedings of the Ninth ACM Conference on Learning @ Scale (L@S'22), June 1 - 3, 2022, New York City, NY, USA. ACM, New York, NY, USA.
  14. Michelle **Banawan**, Kathryn McCarthy, Laura Allen, Joseph Magliano and Danielle Mcnamara Linguistic Indicators of Sourcing Strategies in Students' Constructed Responses. In Proceedings of 32nd Annual Meeting of the Society for Text and Discourse [online], July 19 - 21, 2022
  15. Balyan, R., Arner, T., Taylor, K., Shin, J., **Banawan, M.**, Leite, W., & McNamara, D. (2022). Modeling One-on-one Online Tutoring Discourse using an Accountable Talk Framework. In *Proceedings of the 15th International Conference on Educational Data Mining* (p. 477).
  16. M. Pacifico-**Banawan**, "How do Learners Learn: Behavioral Profiles of High School Math Learners," 2021 IEEE International Conference on Engineering, Technology & Education (TALE), 2021, pp. 353-358, doi: 10.1109/TALE52509.2021.9678845.
  17. **Banawan, M.**, Balyan, R., Shin, J., Leite, W. L., & McNamara, D. (2021). Linguistic Features of Discourse within an Algebra Online Discussion Board. In Proc. The 14th Conference on Education Data Mining, Paris, France, June 29th-July 2nd.
  18. Wan, Q., Crossley, S. A., **Banawan, M.**, Balyan, R., McNamara, D. S., & Allen, L. (2021). Automated Claim Identification Using NLP Features in Student Argumentative Essays. In F. Bouchet, J. Vie, S. Hsiao, & S. Sahebi (Eds.), *Proceedings of the 14th International Conference on Educational Data Mining (EDM-2021)*: International Education Data Mining Society.
  19. Shin, J., Balyan, R., **Banawan, M.**, Leite, W. L., & McNamara, D. S. (2021). Pedagogical Communication Language in Video Lectures: Empirical Findings from Algebra Nation. In de Vries, E., Hod, Y., & Ahn, J. (Eds.), *Proceedings of the 15th International Conference of the Learning Sciences - ICLS 2021*. (pp. 323-329).

Bochum, Germany: International Society of the Learning Sciences.  
(<https://doi.org/10.22318/icls2021.323>)

20. Shin, J., Balyan, R., **Banawan, M.**, Leite, W. L., & McNamara, D. S (2021, April). Discovering Pedagogical Communication Strategies with Algebra Tutoring videos with a Theory-based NLP Approach. 2021 Annual Meeting of American Education Research Association (AERA) (Online)
21. **Banawan, M.**, Perret, C., Oncel, P., Creer, S., McNamara, D., & Allen, L. (Nov. 2020). Cohesion and Action: NLP Reveals Principal Components of COVID-19 Tweets. 50th Annual Conference of the Society for Computation in Psychology (SCIP) (Online) [Accepted Abstract & Spoken Presentation]
22. Shin, J., Balyan, R., **Banawan, M.**, Leite, W. L., & McNamara, D. S (Nov, 2020). Combining Discourse Analysis and Natural Language Processing: Revealing Patterns of Pedagogical Communication in Algebra Tutoring. 2021 Annual Meeting of the Society for Computation in Psychology (SCIP) (Online)
23. **Banawan, M. P.**, & Rodrigo, M. M. T. (2019, September). An investigation of carefulness among students using an educational game for Physics. In Theory and Practice of Computation: Proceedings of the Workshop on Computation: Theory and Practice (WCTP 2018), September 17-18, 2018, Manila, The Philippines (p. 1). CRC Press. [Peer-reviewed Book Chapter]

Articles and Media Features on Michelle Banawan, PhD
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1. **APRU (Association of Pacific Rim Universities)**  
*"White Paper Offers HE a Balanced Plan for AI Engagement"*  
<https://www.apru.org/news/white-paper-offers-he-a-balanced-plan-for-ai-engagement/>
2. Social media feature: [https://www.instagram.com/p/DFBzao\\_sl0v/](https://www.instagram.com/p/DFBzao_sl0v/)
3. **OpenGov Asia**  
*"AI Meets Academia: Innovating the Path to Educational Excellence"*  
<https://archive.opengovasia.com/2025/03/13/exclusive-ai-meets-academia-innovating-the-path-to-educational-excellence/>
4. **APRU Tech Policy Hackathon (Facebook Feature Video)**  
*Highlighting role as Academic Lead (SIDSA) and Co-Lead of Hackathon*  
<https://www.facebook.com/apru1997/videos/relive-the-innovation-collaboration-and-adrenaline-of-the-apru-tech-policy-hacka/1549729379718884/>
5. **International Union of Superiors (IUS)**  
*"Third IUS East Asia-Oceania Continental Conference: Future of Salesian Higher Education"*  
<https://ius-sdb.com/third-ius-east-asia-oceania-continental-conference-future-salesian-higher-education/>

6. **International Conference on Computers in Education (ICCE 2024)**  
*Keynote Speaker Feature*  
<https://icce2024.ateneo.edu/keynote.html>
7. **Altair**  
*"Empowering Non-Technical Executives Through Data Science Tools"*  
<https://altair.com/resource/empowering-non-technical-executives-through-data-science-tools>
8. **Xavier University – Ateneo de Cagayan**  
*"Graduate Lecture: Embracing AI in Education"*  
<https://www.xu.edu.ph/xavier-news/205-xu-ateneo-news-sy-2023-2024/6216-xavier-ateneo-graduate-lecture-embracing-ai-in-education>
9. **Invited Talk / Feature**  
*"Transformative Teaching and Learning with Generative AI"*  
<https://www.xu.edu.ph/church/205-news/xu-ateneo-news-sy-2023-2024/6080-xu-higher-education-faculty-engages-in-continuing-discussion-on-generative-ai-in-education>

Summary of Speaking Engagements (For the last 3 years)
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1. **AI, Critical Thinking, and the Crisis of Deep Thought- Keynote for the 9<sup>th</sup> Ateneo Graduate Research and Innovation Conference 2025**  
*Date: May 3, 2025*  
*Organizer: School of Arts and Sciences, Ateneo*  
*Venue: Finster Auditorium, Davao City, Philippines*
2. **Designing your Niche AI Curriculum – Presentation at the National Convention of the Philippine Society of Information Technology Educators**  
*Date: March 21, 2025*  
*Organizer: Philippine Society of Information Technology Education*  
*Venue: Bohol Tropics, Tagbilaran, Philippines*
3. **AI Meets Academia: Innovating the Path to Educational Excellence**  
*Date: March 13, 2025*  
*Organizer: OpenGov Asia*  
*Venue: Shangrila Edsa, Philippines*
4. **Seminar on Large Language Models and the Future of Artificial Intelligence (Webinar)**  
*Date: March 1, 2025*  
*Organizer: University of St. La Salle Bacolod*
5. **State-of-the-Art Generative AI for Teaching and Learning (Resource Speaker)**  
*Date: December 4, 2024*  
*Organizer: CHEDx 2.0 (Commission on Higher Education)*
6. **Learning from Generative AI for Cognitive and Pedagogical Teaching Strategies (Keynote Speaker)**  
*Date: November 27, 2024*  
*Organizer: Asia Pacific Society for Computers in Education (International Conference on Computers in Education)*
7. **Agentic Generative AI for Educators (Resource Speaker/Tutorial Facilitator)**  
*Date: November 25, 2024*

- Organizer: Asia Pacific Society for Computers in Education (International Conference on Computers in Education)*
8. **Altair Data Science Day: Talk on Empowering Non-Technical Leaders with Data Science Tools** (Resource Speaker)  
*Date: November 7, 2024*  
*Organizer: Altair AI (Online)*
  9. **2024 Natural Language Processing (NLP) Summit** (Resource Speaker)  
*Date: September 26, 2024*  
*Organizer: John Snow Labs (Online)*
  10. **16<sup>th</sup> National E-learning Conference: The Future of Personalized and Adaptive Learning with Generative AI** (Resource Speaker)  
*Date: September 6, 2024*  
*Organizer: Philippine E-Learning Society (Venue: LPU – Davao City)*
  11. **Seminar/Workshop on Integrating Generative AI in Teaching and Learning for IT Educators** (Resource)  
*Date: August 9 -10, 2024*  
*Organizer: Philippine Society of IT Educators Region 7 (Venue: University of Cebu Banilad campus)*
  12. **Artificial Intelligence in Education** (Resource Speaker)  
*Date: July 31, 2024*  
*Organizer: University of Mindanao (Faculty Retooling Seminar – Online).*
  13. **Integrating Generative AI in Teaching and Learning** (Resource Speaker)  
*Date: July 13, 2024*  
*Organizer: University of San Jose Recoletos (Capacity Building for Recoletos Educators).*
  14. **How AI is Changing our Lives and Work – Philippine Perspective** (Resource Speaker)  
*Date: July 5, 2024*  
*Organizer: Talent, Leadership, and Change Consulting. The TLC Solution.*
  15. **Entrepreneurs Implementing Sustainability & Governance in the Age of AI** (AI panel)  
*Date: June 27, 2024*  
*Organizer: International Council for Small Business Philippines (ICSB Ph)*
  16. **Digital Innovations and Data Science Fueling a Sustainable Future**  
*Date: June 25, 2024*  
*Organizer: ICCT Colleges Foundation, Inc.*
  17. **3<sup>rd</sup> APSCE International Conference on Future Language Learning - ICFULL** (conducted a tutorial session on NLP)  
<https://sites.google.com/ateneo.edu/icfull2024/programme>  
*Date: June 20, 2024*  
*Organizer: Asia Pacific Society for Computers in Education (APSCE)*
  18. **APRU Generative AI in Education Foresight Workshop (HKUST)**  
*Date: June 13-14, 2024*  
*Organizer: Association of Pacific Rim Universities (APRU)*
  19. **Redefining Travel Horizons: Leading with AI and Data**  
*Date: April 25, 2024*  
*Organizer: Women in Travel*
  20. **Innovative Data Science and Data Analytics**

- Date:* April 19, 2024, 9am to 12nn  
*Organizer:* San Carlos University (Department of Computer, Information Sciences and Mathematics), Cebu City
21. **Navigating the Future with AI: Challenges and opportunities**  
*Date:* April 19, 2024, 2pm to 4pm  
*Organizer:* San Carlos University (University Research Council), Cebu City
  22. **Sensemaking Workshop for the APRU Generative AI in Education: Opportunities, Challenges and Future Directions in Asia and the Pacific Initiative** (Discussant)  
*Date:* March 13-14, 2024  
*Organizer:* Association of Pacific Rim Universities
  23. **Data Science Frontiers: Harnessing NLP and Generative AI for IT Education Advancement**  
*Date:* February 24, 2024  
*Organizer:* Philippine Society of Information Technology Educators (PSITE National and PSITE Academy)
  24. **Alumni Masterclass: The Evolution of AI and Data Science**  
*Date:* February 20, 2023  
*Organizer:* Alumni Relations Office (ARO)
  25. **Deep NLP and Generative AI in Education**  
*Date:* March 10, 2023  
*Organizer:* Asia Pacific Society for Computers in Education
  26. **Navigating PostDoc Journeys: Philippine Computing Society's Women in Computing**  
*Date:* March 31, 2023  
*Organizer:* Philippine Computing Society
  27. **AIM MSc FinTech Masterclass: Digital Transformation in Fintech - AI and Machine Learning in FinTech**  
*Date:* April 26, 2023  
*Venue:* Asian Institute of Management
  28. **ChatGPT Workshop for Graduate Education**  
*Date:* July and August, 2023  
*Venue:* Ateneo de Davao University
  29. **Transformative Teaching and Learning with Generative AI**  
*Date:* August 8, 2023  
*Venue:* Xavier University
  30. **AI for Disaster Risk and Management**  
*Date:* August 10, 2023  
*Organizers:* Spectee, Tokyo, Japan and AIM
  31. **ChatGPT for Graduate School Educators**  
*Date:* August 24, 2023  
*Venue:* Pamantasan ng Lungsod ng Maynila
  32. **The Challenges of AI in Higher Education**  
*Date:* September 25, 2023  
*Organizers:* Higher Education Institutions of the Salesians of Don Bosco East Asia-Oceania Region
  33. **Computational Linguistic Analysis of Chatbot Prompts**  
*Date:* October 3-5, 2023

*Event:* NLP Summit 2023 - Jon Snow Labs

*URL:* [https://www.nlpsummit.org/computational-linguistic-analysis-of-engineered-chatbot-prompts/?utm\\_content=278401938&utm\\_medium=social&utm\\_source=twitter&hss\\_channel=tw-3551532493](https://www.nlpsummit.org/computational-linguistic-analysis-of-engineered-chatbot-prompts/?utm_content=278401938&utm_medium=social&utm_source=twitter&hss_channel=tw-3551532493)

**34. Learning Series Seminar: AI and ChatGPT**

*Date:* October 17, 2023

*Venue:* PATA/PIATA - Dusit Thani Manila

**35. Realizing the Potential & Mitigating the Risks of AI for Graduate Education**

*Date:* October 28, 2023

*Event:* [Xavier Ateneo Graduate Lecture: Embracing AI in Education](#)

*URL:* <https://youtu.be/YljdjmPE9Tc>

**36. Natural Language Processing Research in Education**

*Date:* November 25, 2023

*Organizer:* Computing Society of the Philippines

**37. International Conference on Computers in Education (Full paper presentation:**

**[Composite Score for ChatGPT Prompt Efficiency: A Computational Linguistic Analysis of Engineered Chatbot Prompts](#)))**

*Date:* December 4-8, 2023

*Organizer:* Asia Pacific Society for Computers in Education

Engagements and Professional Memberships in the last 5 years
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1. Academic Lead, Social Impact Data Science Accelerator ([SIDSA](#)) of the Association of Pacific Rim Universities and Data.org, 2025 – present
2. Academic Co-Lead, Tech Policy Hackathon, of the Association of Pacific Rim Universities, Google, and Data.Org - 2025
3. Member, Asia Pacific Society for Computers in Education, 2018 – present
4. Program Committee Member, Artificial Intelligence in Education 2021 – present
5. Program Committee Member, Educational Data Mining 2021 - 2024
6. Chair, Artificial Intelligence in Education/Intelligent Tutoring Systems/Adaptive Learning (AIED/ITS/AL) SIG of the Asia Pacific Society for Computers in Education – 2020 – 2021
7. Co-chair, Sub-conference C4 Classroom, Ubiquitous, and Mobile Technologies Enhanced Learning (CUMTEL), 29<sup>th</sup> International Conference on Computers in Education - 2021
8. Program Committee Member, Artificial Intelligence in Education 2021 - present
9. Member, Women in Engineering Committee, IEEE Technical Committee on Learning Technology – 2020 - 2021

10. Associate Member, National Research Council of the Philippines, March 2019 - present
11. Poster Track Co-chair, 15th International Conference on Educational Data Mining, 24 -27 July 2022
12. Chair, WIPP and Poster, 28<sup>th</sup> International Conference on Computers in Education (online) - 2020
13. Co-chair, Workshop and Interactive Events, 27<sup>th</sup> International Conference on Computers in Education, Kenting, Taiwan - 2019