

MICHELLE PACIFICO-BANAWAN, Ph.D.

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Education

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

Summary of Professional Experience

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

Directs the Philippines' first Transnational Higher Education Program offered by the Asian Institute of Management and C.T. Bauer College of Business' University of Houston; As Asst. Professor teaches Natural Language Processing, Programming, Data Visualization and Storytelling, Applied Artificial Intelligence, and Digital Transformation; Mentors graduate student research (Masters and PhD level);

3. Post-doctoral Researcher (October, 2019 – February, 2023)
SOLET lab Department of Psychology

Arizona State University
AZ, USA

Conducted research applying machine learning and natural language processing to study reading comprehension and writing proficiency and social media discourse.

4. Associate Professor – Ateneo de Davao University, Philippines (2007 – 2019)
MIS Director

Focal person on the oversight of systems development projects, monitoring deployed systems, documentation of information systems, and the design and implementation of information systems strategic plan of the University

Assistant to the Academic Vice President

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

Teaching expertise: machine learning, software engineering, database management systems, computing research, computer programming and systems analysis and design

5. Board of Examiner and Question Contributor to the Question Formulation Meetings for Japan's IPA (Information Technology Promotion Agency) and the PhilNITS FE Exam (2015-2018)

Submits questions and attends the question formulation meetings for the AM and PM Fundamental IT Engineer Certification Exam

6. Computer Programmer/ Systems Analyst (1998 – 2007)
City Information Technology Center
City Government of Davao, Philippines

Performs business analysis and information systems analysis in the design and development of enterprise management systems and information management systems

Performs full-stack development using php frameworks, other development programming languages used are C#, C++, Java and Python.

In charge of Database Management and configuration (MySQL and MS SQL Database servers)

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

Summary of Research and Publications for the Last 5 years

1. **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. Kashiara 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>
2. 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.
3. **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>
4. **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
5. 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.
6. Banawan, Michelle, Reese Butterfuss, Karen S. Taylor, Katerina Christhilf, 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.
7. 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.
8. 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.
9. 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.

10. 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
11. 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).
12. 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.
13. **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.
14. 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.
15. 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>)
16. 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)
17. **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]
18. 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)

19. **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]

Summary of Speaking Engagements (current year and last year [2023])

1. **AI, Critical Thinking, and the Crisis of Deep Thought- Keynote for the 9th 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. 16th 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. 3rd 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
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

Professional Memberships in the last 5 years
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1. Member, Asia Pacific Society for Computers in Education, 2018 – present
2. Program Committee Member, Artificial Intelligence in Education 2021 – present
3. Program Committee Member, Educational Data Mining 2021 - present
4. 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
5. Co-chair, Sub-conference C4 Classroom, Ubiquitous, and Mobile Technologies Enhanced Learning (CUMTEL), 29th International Conference on Computers in Education - 2021
6. Program Committee Member, Artificial Intelligence in Education 2021 - present
7. Member, Women in Engineering Committee, IEEE Technical Committee on Learning Technology – 2020 - 2021
8. Associate Member, National Research Council of the Philippines, March 2019 - present
9. Poster Track Co-chair, 15th International Conference on Educational Data Mining, 24 -27 July 2022
10. Chair, WIPP and Poster, 28th International Conference on Computers in Education (online) - 2020

11. Co-chair, Workshop and Interactive Events, 27th International Conference on Computers in Education, Kenting, Taiwan - 2019