RAYMOND MORLAND

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EDUCATION

M. Sc. Computing and Information Systems **2025 – 2027**
Athabasca University
GPA: 4.0 / 4.0
Supervisor: Dr. Fuhua (Oscar) Lin

B. Sc. Computing and Information Systems **2022 – 2024**
Athabasca University
GPA: 3.94 / 4.0
Graduated with Great Distinction

B. Sc. Physics **2011 – 2016**
University of Saskatchewan
Minor: Mathematics

HONORS AND AWARDS

AU Graduate Student Research Fund Scholarship	2025
IEEE Outstanding Services Award	2025
AU Undergraduate Outstanding Achievement Scholarship - BSc 4th year	2024
Gateway to AU Undergraduate Course Award	2023

PUBLICATIONS

Conference Papers

Morland, R., Lin, F., & Jin, Q. (in press). EMGen: Human-AI Collaboration to Generate Educational Material. Accepted for presentation at *International Workshop on LLM and Agentic AI for Personalized Learning (LAAPL 2025)*.

Lin, F. & **Morland, R.** (2025). Curriculum Modeling for Adaptive Learning. In: Sottilare, R.A., Schwarz, J. (eds) Adaptive Instructional Systems. HCII 2025. Lecture Notes in Computer Science, vol 15813. Springer, Cham. https://doi.org/10.1007/978-3-031-92970-0_5.

Morland, R. D., Jhajj, G., Yan, H., Lin, F., Mellick, J., Treu, R., Farrelly, G., Zariski, A., Al-Shamali, F., Wang, Z., Heller, B., & Dewan, M. A. A. (in press). Can question validation criteria improve the quality of LLM-generated multiple-choice questions? Accepted for

presentation at the *1st International Workshop on Smart Education in the Age of Generative AI (SEGA), 2025*.

Yan, H., **Morland, R. D.**, Lin, F., Kinshuk, & Ives, C. (in press). Simulating a ZPD-based knowledge tracing model for enhanced adaptive practicing. Accepted for presentation at the *1st International Workshop on Smart Education in the Age of Generative AI (SEGA), 2025*.

Jhajj, G., Gustafson, J. R. D., **Morland, R.**, Gutierrez, C. E., Lin, M. P. C., Dewan, M. A. A., & Lin, F. (2025). Neuromorphic Knowledge Representation: SNN-Based Relational Inference and Explainability in Knowledge Graphs. In: Graf, S., Markos, A. (eds) Generative Systems and Intelligent Tutoring Systems. ITS 2025. Lecture Notes in Computer Science, vol 15724. Springer, Cham. https://doi.org/10.1007/978-3-0 31-98284-2_13.

Morland, R., Wang, L., & Lin, F. (2024). Fast Weakness Identification for Adaptive Feedback. In A. Sifaleras, & F. Lin (Eds.), *Generative Intelligence and Intelligent Tutoring Systems - 20th International Conference, ITS 2024, Proceedings*. https://doi.org/10.1007/978-3-031-63028-6_4.

Lin, F., **Morland, R.**, & Yan, H. (2024). QuizMaster: An Adaptive Formative Assessment System. In A. Sifaleras, & F. Lin (Eds.), *Generative Intelligence and Intelligent Tutoring Systems - 20th International Conference, ITS 2024, Proceedings* (pp. 55-67). (Lecture Notes in Computer Science**.** https://doi.org/10.1007/978-3-031-63028-6_5 (Nominated for best paper award).

Conference Presentations

Lin, F. & **Morland, R.** (in press). An Instructor-LLM Collaboration Model to Generate Educational Material. Accepted for presentation at *Applied Human Factors and Ergonomics Conference (AHFE 2025)*.

Other Publications

Morland, R. & Lin, F. (2025). An Adaptable Client-Server Architecture for Generating Educational Content using Large Language Models. *Bulletin of the Technical Committee on Learning Technology*, 25(1), 42–49. https://tc.computer.org/tclt/10-1109-2025-0101003/.

PRESENTATIONS

"An Adaptable Client-Server Architecture for Generating Educational Content using Large Language Models". *Athabasca University Graduate Student Research Conference (GSRC)*, Edmonton, Canada, November 2025.

"Can Question Validation Criteria Improve the Quality of LLM-Generated Multiple-Choice Questions?". *The 1st International Workshop on Smart Education in the Age of Generative AI (SEGA) at IEEE Smart World Congress 2025*, Calgary, Canada, August 2025.

"AUAAS: Pioneering a Remote-First Approach to Student UAS Competitions". *International Conference on Interdisciplinary Innovations in Computing and Society (ICIICS 2025)*, Athabasca, Canada, August 2025.

"Fast Weakness Identification for Adaptive Feedback". *Generative Intelligence and Intelligent Tutoring Systems - 20th International Conference (ITS 2024)*, Virtual Presentation, June 2024.

RESEARCH EXPERIENCE

Athabasca University, Intelligent Educational Systems Research Group
Graduate Research Assistant January 2024 – Present

- Supervisor: Dr. Oscar Lin
- Conduct research on adaptive tutoring systems, AI-driven assessment algorithms, reinforcement learning, and LLM-based educational content generation within the Intelligent Educational Systems Research Group.
- Design and develop research software and platforms using Python, PyTorch, LangChain, React, and Node.js; collaborate with faculty on AI-in-education projects, mentor undergraduate interns, and co-author peer-reviewed publications.

Simon Fraser University, Sivak Group
Work-Study Student January 2017 – August 2017

- Supervisor: Dr. David Sivak
- Conducted biophysics research using computational modeling and statistical analysis (Python, MATLAB, and biomolecular simulation tools) to analyze and simulate DNA molecular dynamics and support experimental results.

PROFESSIONAL EXPERIENCE

Mordev Studio January 2018 – Present
Web Developer

- Provide web development and digital solutions, designing and deploying responsive, data-driven websites and applications that enhance clients' online presence, usability, and organizational effectiveness.

PROFESSIONAL AFFILIATIONS

- Intelligent Systems and Machine Learning (ISML) Research Cluster 2025 – Present
  Athabasca University
- Intelligent Educational Systems (IES) Research Group 2024 – Present
  Athabasca University
- Association for Computing Machinery (ACM) 2024 – Present
  Student Member
- Institute of Electrical and Electronics Engineer (IEEE) 2023 – Present
  Graduate Student Member

SERVICE

IEEE Smart World Congress 2025 September 2024 – August 2025

- Web Chair
- Led the development and management of the official conference website

Athabasca University Autonomous Aerial Systems November 2024 – September 2025

- Lead group as Team Captain by assisting in the design of autonomous drones, coordination of multidisciplinary collaboration, and project development for national student competitions.

TECHNICAL SKILLS

- Programming Languages: Python, JavaScript, C++, Java, PHP
- Web & Application Development: React, Next.js, Node.js, Angular, FastAPI, WordPress, Jekyll, HTML, CSS
- Databases: MongoDB, PostgreSQL, SQL
- Artificial Intelligence & Machine Learning: PyTorch, Scikit-learn, LangChain, Flower, LLMs, Deep Learning, Reinforcement Learning, Multi-armed Bandits
- Cloud & DevOps: Amazon Web Services, Google Cloud Platform, DigitalOcean
- Software Engineering & Tools: Git, GitHub, UML, Linux/UNIX, Windows