

# Cecilia Ying

CLINICAL ASSISTANT PROFESSOR · MGMT. INFORMATION SYSTEMS

*Mitch Daniels School of Business, Purdue University*

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## Education

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### Smith School of Business, Queen's University

Kingston, ON

DOCTOR OF PHILOSOPHY - PHD, ANALYTICS

2020 - 2025

- Thesis: "Three Studies on the Practical Use of Advanced Machine Learning Techniques in Analytics"
- Specializations:
  - Natural Language Processing - Large Language Models, Topic Modelling, and Conversation Analytics
  - Machine Learning and Artificial Intelligence - Model Fairness, Discrimination and Biases, and Model Explainability

### Smith School of Business, Queen's University

Kingston, ON

MASTER OF SCIENCE - MSc, ANALYTICS

2019 - 2020

- Thesis: "Improving the Classification Parity of Machine Learning Models through Subgroup Thresholds Optimization (STO)"

### Smith School of Business, Queen's University

Toronto, ON

MASTER OF MANAGEMENT ANALYTICS

2018 - 2019

### University of Waterloo

Waterloo, ON

JOINT HONOURS BACHELOR OF ARTS, APPLIED ECONOMICS AND MATHEMATICS

1999 - 2004

- Finance Specialization, Co-op

**RESEARCH INTERESTS** Service Operations, Behavioral Operations, Analytics, NLP, Credit Risk Modelling

**TEACHING INTERESTS** AI and Machine Learning, Business Analytics, Operations Management, Risk Management

## Publications

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Jenkin, T., Kelley, S., Ovchinnikov, A., **Ying, C.**, 2023. Explanation Seeking and Anomalous Recommendation Adherence in Human-to-Human versus Human-to-Artificial Intelligence Interactions. **Decision Science** - Oct. 2024 \*Authors listed in alphabetical order and have contributed equally.

### SUBMITTED MANUSCRIPTS

**Ying, C.**, Du, H., 2025. Policies for Mitigating Group Differences in Machine Learning for Credit Assessment. **Management Science** - Under Review

### REFEREED CONFERENCE PROCEEDINGS

**Ying, C.**, Thomas, S., 2022. Label Errors in BANKING77. In Proceedings of the Third Workshop on Insights from Negative Results in NLP, pages 139–143, Dublin, Ireland. **Association for Computational Linguistics (ACL)**.

**Ying, C.**, Thomas, S., 2021. Improving Fairness in Credit Lending Models using Subgroup Threshold Optimization. In Proceedings of the Learning and Decision-Making with Strategic Feedback (StratML) workshop. **Neural Information Processing Systems (NeurIPS)**.

### BOOK CHAPTERS

Purda, L., **Ying, C.**, 2022. Consumer Credit Assessments in the Age of Big Data. In Big Data in Finance: Opportunities and Challenges of Financial Digitalization (pp. 95-113). **Springer International Publishing**. \*Authors listed in alphabetical order and have contributed equally.

## Awards, Fellowships, Grants

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2025	<b>Distinguished Professor for Teaching Excellence</b> , Mitch Daniels School of Business	
2021 - 2024	<b>Joseph-Armand Bombardier Canada Graduate Scholarships</b> , Social Sciences and Humanities Research Council (SSHRC)	\$105,000
2020 - 2024	<b>Graduate Research Fellowship</b> , Mitacs Accelerate Award	\$100,000
2023	<b>Alan R. Dennis Doctoral Award</b> , Smith School of Business	\$2,332
2022 - 2023	<b>Melville S. Hatch Memorial Fellowship</b> , Smith School of Business	\$8,249
2020 - 2023	<b>Graduate Research Fellowship</b> , Monieson Center Grant	\$63,000
2019 - 2023	<b>School of Business Fellowship</b> , Smith School of Business	\$78,000
2021 - 2022	<b>New PhD Student Research Excellence Award</b> , Smith School of Business	\$600
2020 - 2021	<b>R. Samuel McLaughlin Fellowship</b> , Queen's University	\$10,000
2020 - 2021	<b>D.D. Monieson Graduate Business Scholarship</b> , Smith School of Business	\$2,600
2020 - 2021	<b>Graduate Entrance Tuition Award</b> , Smith School of Business	\$5,773
2019 - 2020	<b>Queen's Graduate Award</b> , Queen's University	\$4,100

## Teaching Experience

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2025	<b>Introduction to AI (Undergraduate - MGMT 187)</b> , Course Developer and Instructor	<i>Purdue</i>
2025	<b>Introduction to Mgmt. Info. Systems (Undergraduate - MGMT 382)</b> , Course Instructor	<i>Purdue</i>
2025	<b>Visual Analytics (Master's - MGMT 590)</b> , Course Instructor	<i>Purdue</i>
2025	<b>Unstructured Data (Master's - MGMT 598)</b> , Course Instructor	<i>Purdue</i>
2023	<b>AI Capstone Project (Master's - MMAI 847)</b> , Workshop Instructor	<i>Queen's</i>
2022 - 2023	<b>Natural Language Processing (Master's - MMAI 891)</b> , Guest Lecturer	<i>Queen's</i>
2022 - 2023	<b>Machine Learning &amp; AI (Master's - MMA 869)</b> , Guest Lecturer	<i>Queen's</i>
2020 - 2021	<b>Machine Learning Certification (Postgraduate)</b> , Course Developer and Instructor	<i>York</i>

## Professional Experience

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2025	<b>Clinical Assistant Professor - MIS</b> , Mitch Daniels School of Business - Purdue University
2023-2024	<b>Consultant - Credit and Retail Risk Modelling Technologies</b> , Scotiabank
2018-2019	<b>Director - Exposure and Credit Analytics, Global Risk Management</b> , Scotiabank
2015-2018	<b>Consultant - Derivatives Trading, Risk and Regulatory Projects</b> , Scotiabank
2015	<b>Lead Business Solution Analyst - Treasury and Balance Sheet Management</b> , TD Securities
2012-2015	<b>Consultant - Credit Risk and Derivative Trading Platforms</b> , Scotiabank
2011-2012	<b>Associate VP - Product Master Environment</b> , Bank of America Merrill Lynch
2008-2011	<b>Manager - Derivatives Trading Platform</b> , Scotia Capital
2007-2008	<b>Sr. Business Analyst - Treasury and Securities Finance</b> , National Bank Financial
2004-2006	<b>Operations Control Analyst - Securities Lending Operations</b> , Royal Bank of Canada

## Presentations

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### CONFERENCE PRESENTATIONS

- Ying, C.**, Thomas, S., 2024. Decision Science Institute (DSI) Annual Conference.  
Oral presentation: Impact of Covert Dialectic Prejudice in Large Language Model.
- Ying, C.**, Thomas, S., 2024. INFORMS Annual Meeting.  
Oral presentation: Unpacking the Dynamics of Customer Experience in AI-Infused Service Workflows.
- Ying, C.**, Thomas, S., 2024. CORS/INFORMS International Conference.  
Oral presentation: Impact of Covert Dialectic Prejudice in Large Language Model in Operations.
- Ying, C.**, Thomas, S., 2024. Production and Operations Management Society (POMS).  
Oral presentation: Detecting and Mitigating Bias in LLMs
- Ying, C.**, 2024. Production and Operations Management Society (POMS).  
Oral presentation: Bias Mitigation for Financial Inclusion in Machine Learning Credit Assessment Models
- Ying, C.**, Thomas, S., 2023. INFORMS Annual Meeting.  
**Finalist** in Poster Competition: Improving Fairness in Machine Learning via Subgroup Threshold Optimization.
- Jenkin, T., Kelley, S., Ovchinnikov, A., **Ying, C.**, 2023. Behavioral Operations Conference (BOC)  
Oral presentation: Explanation Seeking and Recommendation Adherence in Human-to-Human versus Human-to-Artificial Intelligence Interactions.
- Ying, C.**, Abuhay, T., Thomas, S., 2023. Production and Operations Management Society (POMS).  
Oral presentation: Natural Language Processing for Understanding Customer Voices in OM.
- Ying, C.**, Thomas, S., 2022. INFORMS Annual Meeting.  
Oral presentation: Improving Conversation Analytics Through Hyperparameter Tuning with and Without Labels.
- Ying, C.**, Thomas, S., 2022. CORS/INFORMS International Conference.  
Oral presentation: Customer Insights Through Hierarchical Clustering: A New Methodology.
- Ying, C.**, Thomas, S., 2022. CORS/INFORMS International Conference.  
Oral presentation: Unsupervised Conversation Analytics.
- Ying, C.**, Thomas, S., 2022. Association for Computational Linguistics Conference, The Third Workshop on Insights from Negative Results in NLP.  
Poster presentation: Label Errors in BANKING77.
- Ying, C.**, 2022. Vector Institute Research Symposium.  
Poster presentation: Unsupervised Conversation Analytics.
- Ying, C.**, Thomas, S., 2021. Conference on Neural Information Processing Systems (NeurIPS), Learning and Decision-Making with Strategic Feedback workshop (StratML).  
Poster presentation: Improving Fairness in Credit Lending Models using Subgroup Threshold Optimization.
- Ying, C.**, 2021. Vector Institute Research Symposium.  
Poster presentation: Improving Fairness in Credit Lending Models with Machine Learning.

### INVITED TALKS

- Jenkin, T., **Ying, C.**, 2020. The International Conference on Information Systems (ICIS).  
Invited talk at Practice Development Workshop: Artificial Intelligence - Beyond the Hype.

## Service

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### COMMITTEES AND VOLUNTEERING

- 2025 - 2026 **INFORMS Canadian Operations Research (CORS)**, President of Analytics SIG
- 2024 - 2025 **INFORMS Canadian Operations Research (CORS)**, Vice President of Analytics SIG
- 2022 - 2023 **Canada Research Chair - Search Advisory Committee**, PhD Student Representative
- 2022 - 2023 **Renewal, Tenure, and Promotion Committee**, PhD Student Representative
- 2021 - 2022 **Associate Dean (Research) - Search Advisory Committee**, PhD Student Representative
- 2021 - 2022 **Smith School of Business Research Committee**, PhD Student Representative
- 2021 - 2022 **New MSc & PhD Students Welcoming Seminar**, Analytics PhD Student Representative
- 2020 - 2021 **EDII research Committee**, PhD student representative
- 2020 - 2021 **EDII blue sky project adjudication committee**, PhD student representative
- 2020 **Equity, Diversity, Inclusion, & Indigeneity (EDII) Task Force**, PhD student representative

### PEER REVIEW

- Association for Computational Linguistics (ACL)
- Academy of Management (AOM)
- Decision Science Institute (DSI)
- International Conference on Information Systems (ICIS)
- Neural Information Processing Systems (NeurIPS)

### PROFESSIONAL MEMBERSHIPS

- Association for Computational Linguistics (ACL)
- Association for Information Systems (AIS)
- Canadian Operations Research (CORS)
- Decision Science Institute (DSI)
- INFORMS
- Production and Operations Management Society (POMS)

## Conference Attendance

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- 2024 **Decision Science Institute (DSI)**, Phoenix, AZ
- 2024 **INFORMS Annual Meeting**, Seattle, WA
- 2024 **CORS/INFORMS International Conference**, London, ON
- 2024 **Production and Operations Management Society (POMS)**, Minneapolis, MN
- 2023 **Decision Science Institute (DSI)**, Atlanta, GA
- 2023 **INFORMS Annual Meeting**, Phoenix, AZ
- 2023 **Academy of Management (AOM)**, Boston, MA
- 2023 **Behavioral Operations Conference (BOC)**, Baltimore, MD
- 2023 **Production and Operations Management Society (POMS)**, Orlando, FL
- 2022 **INFORMS Annual Meeting**, Indianapolis, IN
- 2022 **CORS/INFORMS International Conference**, virtual
- 2022 **Association for Computational Linguistics**, Dublin, Ireland
- 2022 **Vector Institute Research Symposium**, virtual
- 2021 **Neural Information Processing Systems (NeurIPS)**, virtual
- 2021 **INFORMS Annual Meeting**, virtual
- 2021 **Vector Institute Research Symposium**, virtual
- 2020 **International Conference on Information Systems (ICIS)**, virtual
- 2019 **Neural Information Processing Systems (NeurIPS)**, Vancouver, BC
- 2019 **Toronto Machine Learning Summit (TMLS)**, Toronto, ON

## References

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**Dr. Stephen Thomas** ([stephen.thomas@queensu.ca](mailto:stephen.thomas@queensu.ca))

Executive Director (Analytics and AI Ecosystems), Distinguished Teaching Fellow of Management Analytics

**Dr. Anton Ovchinnikov** ([anton.ovchinnikov@queensu.ca](mailto:anton.ovchinnikov@queensu.ca))

Professor and Distinguished Professor of Management Analytics

**Dr. Lynnette Purda** ([purdal@queensu.ca](mailto:purdal@queensu.ca))

Interim Dean, Professor & RBC Fellow of Finance