

# Craig Fernandes

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## Education

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**PhD Operations Research**, University of Toronto Sep 2021 – Aug 2026  
Advisors: Timothy C.Y. Chan and Ningyuan Chen

**MASc Operations Research**, University of Toronto Jan 2020 – Aug 2021  
Advisor: Timothy C.Y. Chan

**BASc Industrial Engineering**, University of Toronto Sep 2014 – May 2018

## Research Visits

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**Dartmouth College**, Tuck School of Business Summer 2024  
Hosts: James Siderius and Raghav Singal

## Research (by Topic)

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### Niche Market Design and Analysis

#### 10. *Data-Driven B2B Pricing*

Timothy Chan, Ningyuan Chen, Craig Fernandes  
*Working paper, 2025.*

#### 9. *Handicapping Strategies for Maximizing Engagement in Amateur Darts Tournaments*

Timothy Chan, Craig Fernandes, Rachael Walker  
*Working paper, 2025.*

- First Place, MIT Sloan Sports Analytics Conference Paper Competition, 2024
- Finalist, CORS Student Paper Competition (Undergraduate Category), 2023 [Awarded to Rachael]

#### 8. *Peer Review Market Design: Effort-Based Matching and Admission Control*

Craig Fernandes, James Siderius, Raghav Singal  
*Under review, 2025.*

- Accepted, ACM Economics and Computation (EC), 2025

#### 7. *Income pools for superstar markets*

Timothy Chan, Ningyuan Chen, Craig Fernandes  
**Management Science**, 2025 (Forthcoming).

- Finalist, CORS Student Paper Competition 2025 (Winner TBD)

#### 6. *Points gained in football: Using Markov process-based value functions to assess team performance*

Timothy Chan, Craig Fernandes, Martin Puterman  
**Operations Research**, 69(3): 877-894, 2021.

- Media Coverage: [INFORMS Analytics Magazine](#)

## **Analytics Education**

### *5. Moneyball for Murderball: Using analytics to construct lineups in wheelchair rugby*

Timothy Chan, Craig Fernandes, Albert Loa, Nathan Sandholtz

**INFORMS Transactions on Education**, 24(2):175-181, 2023.

- First Place, INFORMS Case Competition, 2022
- Media Coverage: [ORMS Today](#)

### *4. Advising student-driven analytics projects: A summary of experiences and lessons learned*

Aaron Babier, Craig Fernandes, Ian Zhu

**INFORMS Transactions on Education**, 23(2):121-135, 2023.

- Media Coverage: [ORMS Today](#)

## **Sports Analytics**

### *3. Equity, diversity, and inclusion in sports analytics*

Craig Fernandes, Jason Vescovi, Richard Norman, Cheri Bradish, Nathan Taback, Timothy Chan

**Journal of Quantitative Analysis in Sports**, 20(2): 87-111, 2024.

### *2. A Markov approach to untangling intention versus execution in tennis*

Timothy Chan, Doug Fearing, Craig Fernandes, Stephanie Kovalchik

**Journal of Quantitative Analysis in Sports**, 18(2): 127-145, 2022.

- Finalist, MIT Sloan Sports Analytics Conference Poster Competition, 2022

### *1. Predicting plays in the National Football League*

Craig Fernandes, Ronen Yakubov, Yuze Li, Amrit Prasad, Timothy Chan

**Journal of Sports Analytics**, 6(1): 35-43, 2020.

## **Teaching Experience**

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### **Course Instructor**

MIE368: Analytics in Action

Fall 2023

### **Teaching Assistant**

MIE263: Stochastic Operations Research, Rated 4.62/5

Winter 2023, 2024, 2025

MIE368: Analytics in Action, Rated 4.86/5

Fall 2020, 2021, 2022

- MIE Teaching Assistant Award, 2022
- MIE Group Teaching Assistant Award, 2020

## **Invited Seminars**

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Rotman Young Scholar Seminar Series (Toronto)

2025

Tuck School of Business OM Group (Dartmouth College)

2024

## Conferences

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### Data-Driven B2B Pricing

- INFORMS (Atlanta) 2025

### Peer Review Market Design

- MSOM (LBS), ACM EC (Stanford), RMP (Columbia), INFORMS (Atlanta) 2025
- NYC Ops Day (NYU), CORS (Edmonton), 2025
- INFORMS (Seattle) 2024

### Income Pools for Superstar Markets

- MIW (Virtual), CORS (Edmonton), MSOM (LBS), RMP (Columbia), INFORMS (Atlanta) 2025
- MSOM (McGill), RMP (Imperial), INFORMS (Phoenix) 2023
- CORS (Vancouver), INFORMS (Indianapolis) 2022

### Handicapping Strategies for Maximizing Engagement in Amateur Darts Tournaments

- SSAC (MIT) 2024

### A Markov approach to untangling intention versus execution in tennis

- CORS (Virtual), NESSIS (Harvard), SSAC (MIT) 2021, 2022

### Points gained in football: Using Markov process-based value functions to assess team performance

- CORS (Halifax), Sport Innovation Summit (Toronto) 2018, 2019

### Predicting plays in the National Football League

- NESSIS (Harvard), CORS (Halifax), Sport Innovation Summit (Toronto) 2017, 2018, 2019

## Industry

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**Amazon**, Data Scientist I (Supply Chain Optimization Technologies)

Summer 2021

**PepsiCo**, Process Improvement Engineering Intern

Summer 2017, 2019

## Research Mentorship

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### Undergraduate Thesis Advising

Rachael Walker 2023

Mustafa Arif (co-advised with Binghao Zhang) 2021

Michael Yin (co-advised with Timothy Chan) 2020

Albert Loa (co-advised with Timothy Chan) 2020

## Service

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### Session Chair

INFORMS Annual Meeting (Revenue Management)	2025
CORS Annual Meeting (Revenue Management)	2025
CORS / INFORMS International (Sports Analytics)	2022

## Honors and Awards

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Paul Cadario Fellowship in Global Engineering (\$8,900)	2025
First Place, MIT Sloan Sports Analytics Conference (\$10,000)	2024
NSERC CGS MSFSS (\$6,000)	2023
Mitacs Globalink Research Award (\$6,000)	2023
TD MDAL Research Grant (\$4,000)	2023
U of T MIE TA Teaching Excellence Award (\$500)	2023
NSERC Vanier CGS (\$150,000)	2023-2025
NSERC CGS D [Declined] (\$105,000)	2023-2025
Wallberg Research Fellowship (\$7,500)	2022
First Place, INFORMS Case Competition (\$500)	2022
U of T SGS Conference Travel Grant (\$800)	2022
U of T MIE Conference Travel Grant (\$650)	2022
Finalist, MIT Sloan Sports Analytics Conference Poster Competition	2022
Ontario Graduate Scholarship (\$15,000)	2021
U of T MIE Group TA Teaching Excellence Award (\$300)	2021
NSERC CGS M (\$17,500)	2020
Second place, CORS Undergraduate Student Paper Competition (\$200)	2018
U of T President's Entrance Scholarship (\$5,000)	2014