# Welcome to INFORMS Student Chapter at OSU!

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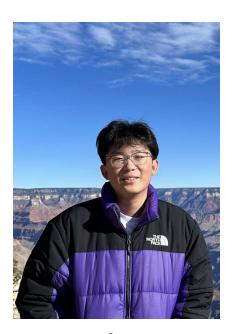THE OHIO STATE UNIVERSITY

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# Officers


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Vice President
(Grad)


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Leroux
Vice President
(Undergrad)


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# What is Operations Research?

- Operations Research (OR) is a discipline that uses mathematics, statistics, and computer science to help make better decisions.

- The primary goal of OR is to optimize performance.
  - Studying – minimize time and maximize exam score.
  - Google Maps – minimize travel time from home to school.
  - Buying an airplane ticket – minimize cost, travel time and ensure arrival at your desired time.

# OR Classes at OSU

- **Undergraduate:**

- ISE 2040 Engineering Economics

- ISE 3200 Linear & Integer Programming

- ISE 3210 Nonlinear & Dynamic Optimization

- ISE 3230 Systems Modeling and Optimization for Analytics

- ISE 4100 Stochastics Modeling & Simulation

- **Graduate :**

- ISE 5110 Design of Engineering Experiments

- ISE 7250 Operations Research Models and Methods

- ISE 6300 Simulation for System Analytics and Decision-Making

- ISE 5200 Linear Optimization

- ISE 6300 Simulation for System Analytics and Decision-Making

- ISE 7200 Advanced Nonlinear Optimization

- ISE 7300 Stochastics Processes

- ISE 7230 Integer Optimization

- ISE 6290 Stochastic Optimization

- ISE 7210 Large-Scale Optimization

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# Employment with OR Degree

- Manufacturing and Supply Chain: optimize production processes, supply chain and distribution (DHL, UPS, Honda).

- Finance and Banking: minimize risks and optimize investment portfolio (Chase, Nationwide, Goldman Sachs).

- Technology: Analyze large datasets, improve algorithms (Google, Meta, Uber).

- Transportation and Logistics: Improve scheduling and route planning (United Airlines, Amazon).

- Healthcare: Scheduling , treatment planning, and resource allocation (OSU Wexner, Pfizer).

# From OR to AI/ML

- Optimization algorithm is the process where we train the model iteratively that results in a maximum and minimum function evaluation.
  - Gradient Descent and Stochastic Gradient Descent Algorithms.
- Hyperparameter Tuning as Optimization.
  - Bayesian Optimization.
- Model selection as optimization.

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# INFORMS National Chapter

- The Institute for Operations Research and the Management Sciences.
- INFORMS is the world's largest professional association for the decision and data sciences.
- INFORMS publishes 17 highly-regarded journals
- Over 12,500 members from around the globe
- 2024 INFORMS Annual Meeting
  - October 20 -23, 2024
  - Seattle, WA

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# INFORMS@OSU

- Primary org for students in OR

- Membership: ISE/CSE/ECE/Stat/Math
  - 120+ active members, 64% grad, 36% undergrad
  - Aiming to welcome more undergraduate students

- Workshops/ Social Events
  - Mentorship Program
  - Industry information session (United Airline, Nationwide)
  - Internship sharing
  - Workshop in OR tools

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# Resources @ OSU

- Engineering career services https://ecs.osu.edu/
- Handshake @ OSU https://handshake.osu.edu/default.aspx
  - Events
  - Resume Book
- Translational Data Analytics Institute https://tdai.osu.edu/



**2024 ENGINEERING CAREER SERVICES CAREER WEEK**

## SCHEDULE OF EVENTS

**Resumania for Career Seekers**
Tuesday, Sept. 3
10 a.m. – 4 p.m.
ECS, Hitchcock Hall 122

**Novice to Interview Expert in 60 Minutes**
Tuesday, Sept. 3
5:30 – 6:30 p.m.
Scott Laboratory E100

**Professional Profile Power-Up**
Wednesday, Sept. 4
11 a.m. – 2 p.m.
ECS, Hitchcock Hall 122

**Start Smart: Negotiating Salary for Your First Job**
Wednesday, Sept. 4
5:30 – 6:30 p.m.
Scott Laboratory E100

**Cookies & Conversations**
Thursday, Sept. 5
3 – 4:30 p.m.
Grand Ballroom – The Blackwell Inn

**Sponsor Employer Panel**
Thursday, Sept. 5
5 – 6 p.m.
Grand Ballroom – The Blackwell Inn

**Industry Night**
Thursday, Sept. 5
6:30 – 8:30 p.m.
Grand Ballroom – The Blackwell Inn

**Work Visa Wisdom With Immigration Attorney, Mark Rhoads**
Friday, Sept. 6
12 – 1 p.m.
Virtual—see Handshake for sign-up info.

**Career Fair Prep Workshop**
Friday, Sept. 6
2 – 3 p.m.
Nosker House Room 100

For full details about Career Week events, visit ecs.osu.edu/events.

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# Resources @ OSU

- RPAC Group Fitness
  - https://recsports.osu.edu/fms/groupfitness
- Student Discounted ticket
  - https://activities.osu.edu/programs/dtix
- Student Legal Services
  - https://studentlegal.osu.edu/schedule
- Career Fair Volunteer Opportunities
  - https://signupgenius.com/ (Help our organization win $50 per hour of volunteering)

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# Upcoming Events

**September '24**

Student Internship Sharing Event

**October '24**

INFORMS Poster Presentation Practices

**November '24**

R workshop

**January '24**

Mock interview Workshop

**September '24**

Nationwide Insurance (Resume / interview techniques workshop)

**October '24**

NFORMS Networking Advises

**November '24**

United Airline Information Session

**January '24**

Mentorship Program

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# Stay Connected

- Join the group me:
  - https://groupme.com/join_group/89368757/JzJ09Nhv
- Our Website:
  - https://u.osu.edu/informsosu/
- Join our mailing list:
  - https://osu.az1.qualtrics.com/jfe/form/SV_6hxtepVvfj94YWq

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