

# Julia Yan

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Operations Research Center, Massachusetts Institute of Technology  
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## EDUCATION

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### Massachusetts Institute of Technology

Candidate for PhD in Operations Research (GPA: 5.00/5.00)

Advisor: Dimitris Bertsimas

Cambridge, MA

Sept. 2015 – present

### Princeton University

BA in Chemistry, Applications of Computing, *Summa cum laude* (GPA: 3.93/4.00)

Honors: Phi Beta Kappa, Robert T. McKay Prize, William Foster Memorial Prize, Shapiro Prize

Princeton, NJ

Sept. 2009 – June 2013

## RESEARCH INTERESTS

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Analytics, transportation and logistics, large-scale optimization, public sector operations research

## PUBLICATIONS AND WORKING PAPERS

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### Transportation

D. Bertsimas & J. Yan. *From physical properties of transportation flows to demand estimation: An optimization approach*, *Transportation Science* 52(4) (2018), 1002-1011.

D. Bertsimas, Y.S. Ng & J. Yan. *Joint frequency-setting and pricing optimization for multi-modal transit networks at scale*, to appear in *Transportation Science*.

D. Bertsimas, Y.S. Ng & J. Yan. *Data-driven transit network design at scale*, major revision in *Operations Research*.

D. Bertsimas & J. Yan. *The edge of optimization in large-scale vehicle routing for paratransit*, to be submitted to *Operations Research*.

S. Moore, J. Yan & D. Lousa. *Creating mobility equity for paratransit customers through intermodal operating systems*, submitted to *Transportation Research Part C*.

### Analytics

L. Berk, D. Bertsimas, A. Weinstein & J. Yan. *Prescriptive analytics for human resource planning in the professional services industry*, *European Journal of Operational Research* 272(2) (2019), 636-641.

J. Yan, N. Patterson & V. Narasimhan. *Fitting admixture graphs using mixed-integer quadratic optimization*, submitted to *Bioinformatics*.

### Physics

D. Hocker, J. Yan & H. Rabitz. *Optimal nonlinear coherent mode transitions in Bose-Einstein condensates utilizing spatiotemporal controls*, *Physical Review A* 93(5) (2016), 053612.

J. Yan, D. Hocker, R. Long, T.S. Ho & H. Rabitz. *Exploring the control landscape for nonlinear quantum dynamics*, *Physical Review A* 89(6) (2014), 063408.

## INDUSTRY EXPERIENCE

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### Analytics Operations Engineering

Analyst

Boston, MA

Sept. 2013 – July 2015

- Designed large-scale optimization algorithms to solve sports scheduling problems.
- Implemented inventory management and pricing optimization tools for major fashion retailers.

## SELECTED TALKS

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<i>The edge of optimization in large-scale vehicle routing for paratransit</i> INFORMS Annual Meeting 2019	Oct. 2019
<i>Data-driven transit network design at scale</i> TRISTAN X INFORMS Annual Meeting 2018	June 2019 Oct. 2018
<i>Joint frequency-setting and pricing optimization for multi-modal transit networks</i> INFORMS Annual Meeting 2017	Oct. 2017
<i>From physical properties of transportation flows to demand estimation</i> UMass Amherst CEE McKinsey & Company INFORMS Annual Meeting 2016	Sept. 2019 Mar. 2017 Nov. 2016
<i>Fitting admixture graphs using mixed-integer quadratic optimization</i> Harvard Medical School	Sept. 2019

## TEACHING EXPERIENCE

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<b>Massachusetts Institute of Technology</b> MBA Capstone Project, Mentor	Cambridge, MA Spring 2018, Spring 2019
<ul style="list-style-type: none"><li>Advised three pairs of students on seven-month consulting projects with The RIDE and General Motors.</li></ul>	
15.071x Analytics Edge MOOC, Teaching Assistant	Fall 2018, Summer 2017
<ul style="list-style-type: none"><li>Wrote final exam, managed team of four teaching assistants.</li><li>Course enrollment: <math>\approx 1,000</math> verified students</li></ul>	
15.071 Analytics Edge, Teaching Assistant	Spring 2017
<ul style="list-style-type: none"><li>Developed new course material in advanced use of R, led weekly recitations.</li><li>Course enrollment: 123 students</li><li>Overall rating: 6.3/7.0</li></ul>	
15.060 Data, Models and Decisions, Teaching Assistant	Fall 2016
<ul style="list-style-type: none"><li>Helped write homework assignments and exams, led weekly recitations.</li><li>Course enrollment: 60 students</li><li>Overall rating: 5.8/7.0</li></ul>	

## SERVICE

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<b>Massachusetts Institute of Technology</b> Resources for Easing Friction and Stress	Cambridge, MA May 2017 – present
<ul style="list-style-type: none"><li>Certified in conflict management by MIT, provide peer-to-peer coaching and support.</li></ul>	
ORC Seminar Co-Organizer	Aug. 2018 – Dec. 2018

## SKILLS

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**Languages:** English (native), Mandarin Chinese (conversational)  
**Computer:** Julia, R, Python, SQL, Java, C

## REFERENCES

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Dimitris Bertsimas, MIT Sloan · [dbertsim@mit.edu](mailto:dbertsim@mit.edu) · (617)253-4223  
Cynthia Barnhart, MIT CEE · [cbarnhar@mit.edu](mailto:cbarnhar@mit.edu) · (617)253-3815  
Robert Freund, MIT Sloan · [rfreund@mit.edu](mailto:rfreund@mit.edu) · (617)253-8997