Damek Davis

**Contact**
218 Rhodes Hall
136 Hoy Road
Cornell University
Ithaca, NY 14853
damekdavis.com
github.com/COR-OPT
dsd95@cornell.edu
Google Scholar

**Interests**
I am broadly interested in the mathematics of data science, particularly the interplay of optimization, signal processing, statistics, and machine learning.

**Positions**

- **2022–** Associate Professor (with tenure)
  Operations Research and Information Engineering
  Cornell University

- **2016–2022** Assistant Professor
  Operations Research and Information Engineering
  Cornell University

- **Sept-Dec 2022** Senior Fellow
  Program on Computational Microscopy
  Institute for Pure and Applied Mathematics

- **Aug-Oct 2017** Visiting Research Scientist
  Program on Bridging Continuous and Discrete Optimization
  Simons Institute for the Theory of Computing

- **2015–2016** NSF Mathematics Postdoctoral Fellow
  University of California, Los Angeles

**Education**

- **2010-2015** Ph.D. in Mathematics
  University of California, Los Angeles
  Thesis: *On the Design and Analysis of Operator-Splitting Schemes*
  Committee: Wotao Yin (chair), Stefano Soatto (co-chair), Stan Osher, Lieven Vandenberghe

- **2006-2010** B.S. summa cum laude
  University of California, Irvine
  Majoring in Mathematics

**Honors and Awards**

- **2023** SIAM Activity Group on Optimization Best Paper Prize
  SIAM

- **2020** NSF CAREER Award
  Budget: $454,000

- **2020** Sloan Research Fellowship in Mathematics
  Budget: $75,000

- **2019** Young Researchers Prize
  INFORMS Optimization Society

- **2019** Finalist: Best Paper Prize for Young Researchers in Continuous Optimization (One of Four)
  ICCOPT

- **2018** A. W. Tucker Dissertation Prize Finalist (One of Two)
  Mathematical Optimization Society
2015 NSF Mathematics Postdoctoral Fellowship  
Budget: $150,000

2015 Dissertation Prize  
Pacific Journal of Mathematics

2014 Student Paper Prize  
INFORMS Optimization Society

2010 NSF Graduate Research Fellowship  
Title: Generalized Wasnitzer and Dagger Algebras and a More General p-Adic Cohomology Theory in Rigid Analysis

2009 Elected to Phi Beta Kappa (Junior Year)

Funding

2020 NSF CAREER Award  
Budget: $454,000

2020 Sloan Research Fellowship in Mathematics  
Budget: $75,000

2015 NSF Mathematics Postdoctoral Fellowship  
Budget: $150,000

Publications

Preprints

[1] Asymptotic normality and optimality in nonsmooth stochastic approximation  
Damek Davis, Dmitriy Drusvyatskiy, and Liwei Jiang  
arXiv preprint arXiv:2301.06632 (2023) Under submission at Annals of Statistics.

[2] Computational Microscopy beyond Perfect Lenses  
Xingyuan Lu, Minh Pham, Elisa Negrini, Damek Davis, Stanley J Osher, and Jianwei Miao  
arXiv preprint arXiv:2306.11283 (2023) Under submission at Physical Review Letters.

[3] Active manifolds, stratifications, and convergence to local minima in nonsmooth optimization  
Damek Davis, Dmitriy Drusvyatskiy, and Liwei Jiang  
arXiv preprint arXiv:2108.11832 (2022) Under submission at Foundations of Computational Mathematics.

[4] A nearly linearly convergent first-order method for nonsmooth functions with quadratic growth  
Damek Davis and Liwei Jiang  
arXiv preprint arXiv:2205.00064 (2022) Under submission at Foundations of Computational Mathematics.

[5] Clustering a Mixture of Gaussians with Unknown Covariance  
Damek Davis, Mateo Díaz, and Kaizheng Wang  
arXiv preprint arXiv:2110.01602 (2021) Under submission at Bernoulli.

[6] Stochastic optimization over proximally smooth sets  
Damek Davis, Dmitriy Drusvyatskiy, and Zhan Shi  
arXiv preprint arXiv:2002.06309 (2020) Under revision at SIAM Journal on Optimization.

Articles in peer-reviewed journals
[1] *A superlinearly convergent subgradient method for sharp semismooth problems*
Vasileios Charisopoulos and Damek Davis
Mathematics of Operations Research (2023). INFORMS.

[2] *Stochastic algorithms with geometric step decay converge linearly on sharp functions*
Damek Davis, Dmitri Drusvyatskiy, and Vasileios Charisopoulos
Mathematical Programming (2023).

[3] *Escaping Strict Saddle Points of the Moreau Envelope in Nonsmooth Optimization*
Damek Davis, Mateo Díaz, and Dmitri Drusvyatskiy
SIAM Journal on Optimization 32.3 (2022) pp. 1958–1983.

[4] *Low-Rank Matrix Recovery with Composite Optimization: Good Conditioning and Rapid Convergence*
Vasileios Charisopoulos, Yudong Chen, Damek Davis, Mateo Díaz, Lijun Ding, and Dmitri Drusvyatskiy
Foundations of Computational Mathematics (2021).

[5] *Variance reduction for root-finding problems*
Damek Davis
Mathematical Programming Series A (2021).

[6] *Conservative and semismooth derivatives are equivalent for semialgebraic maps*
Damek Davis and Dmitri Drusvyatskiy
Set-Valued and Variational Analysis (2021) pp. 1–11. Springer.

[7] *Proximal Methods Avoid Active Strict Saddles of Weakly Convex Functions*
Damek Davis and Dmitri Drusvyatskiy
Foundations of Computational Mathematics (2021).

[8] *From Low Probability to High Confidence in Stochastic Convex Optimization*
Damek Davis, Dmitri Drusvyatskiy, Lin Xiao, and Junyu Zhang
Journal of Machine Learning Research 22.49 (2021) pp. 1–38.

[9] *Composite optimization for robust rank one bilinear sensing*
Vasileios Charisopoulos, Damek Davis, Mateo Díaz, and Dmitri Drusvyatskiy
Information and Inference: A Journal of the IMA (2020).

[10] *Graphical convergence of subgradients in nonconvex optimization and learning*
Damek Davis and Dmitri Drusvyatskiy
Mathematics of Operations Research (Learning Theory) (2020).

[11] *The nonsmooth landscape of phase retrieval*
Damek Davis, Dmitri Drusvyatskiy, and Courtney Paquette
IMA Journal of Numerical Analysis 40.4 (Jan. 2020) pp. 2652–2695.

[12] *Stochastic model-based minimization of weakly convex functions*
Damek Davis and Dmitri Drusvyatskiy
SIAM Journal on Optimization 29.1 (2019) pp. 207–239.

[13] *Stochastic subgradient method converges on tame functions*
Damek Davis, Dmitri Drusvyatskiy, Sham Kakade, and Jason D Lee
Foundations of Computational Mathematics (Jan. 2019).

[14] *Proximally Guided Stochastic Subgradient Method for Nonsmooth, Nonconvex Problems*
Damek Davis and Benjamin Grimmer
SIAM Journal on Optimization 29.3 (2019) pp. 1908–1930. SIAM.

[15] *Trimmed Statistical Estimation via Variance Reduction*
Aleksandr Aravkin and Damek Davis
Mathematics of Operations Research (2018).

[16] *Forward-Backward-Half Forward Algorithm with non Self-Adjoint Linear Operators for Solving Monotone Inclusions*
Luis M Briceno-Arias and Damek Davis
SIAM Journal on Optimization 28.4 (2018) pp. 2839–2871.
[17] **Subgradient methods for sharp weakly convex functions**  
Damek Davis, Dmitriy Drusvyatskiy, Kellie J MacPhee, and Courtney Paquette  
*Journal of Optimization Theory and Applications* 179.3 (2018) pp. 962–982. *Springer.*

[18] **A Three-Operator Splitting Scheme and its Optimization Applications**  
Damek Davis and Wotao Yin  
*Set-Valued and Variational Analysis* 25.4 (Dec. 2017) pp. 829–858.

[19] **Faster convergence rates of relaxed Peaceman-Rachford and ADMM under regularity assumptions.**  
Damek Davis and Wotao Yin  
*Mathematics of Operations Research* 42.3 (2017) pp. 783–805.

[20] **Beating level-set methods for 3D seismic data interpolation: a primal-dual alternating approach**  
Rajiv Kumar, Oscar López, Damek Davis, Aleksandr Y. Aravkin, and Felix J. Herrmann  
*IEEE Transactions on Computational Imaging* (2017).

[21] **Convergence Rate Analysis of Primal-Dual Splitting Schemes**  
Damek Davis  
*SIAM Journal on Optimization* 25.3 (2015) pp. 1912–1943.

[22] **Convergence Rate Analysis of the Forward-Douglas-Rachford Splitting Scheme**  
Damek Davis  
*SIAM Journal on Optimization* 25.3 (2015) pp. 1760–1786.

[23] **Tactical Scheduling for Precision Air Traffic Operations: Past Research and Current Problems**  
Douglas R. Isaacson, Alexander V. Sadovsky, and Damek Davis  
*Journal of Aerospace Information Systems* 11.4 (2014) pp. 234–257. *American Institute of Aeronautics and Astronautics.*

[24] **Efficient Computation of Separation-Compliant Speed Advisories for Air Traffic Arriving in Terminal Airspace**  
Alexander V. Sadovsky, Damek Davis, and Douglas R. Isaacson  
*Journal of Dynamic Systems, Measurement, and Control* 136.4 (2014) p. 041027. *American Society of Mechanical Engineers.*

[25] **Separation-compliant, optimal routing and control of scheduled arrivals in a terminal airspace**  
Alexander V. Sadovsky, Damek Davis, and Douglas R. Isaacson  
*Transportation Research Part C: Emerging Technologies* 37 (2013) pp. 157–176.

[26] **Factorial and Noetherian subrings of power series rings**  
Damek Davis and Daqing Wan  
*Proceedings of the American Mathematical Society* 139.3 (2011) pp. 823–834.

**Articles in peer-reviewed conferences**

[1] **Aiming towards the minimizers: fast convergence of SGD for overparametrized problems**  
Chaoyue Liu, Dmitriy Drusvyatskiy, Mikhail Belkin, Damek Davis, and Yi-An Ma  
*Neural Information Processing Systems,* 2023.

[2] **A gradient sampling method with complexity guarantees for Lipschitz functions in high and low dimensions**  
Damek Davis, Dmitriy Drusvyatskiy, Yin Tat Lee, Swati Padmanabhan, and Guanghao Ye  
*Neural Information Processing Systems (ORAL, ≈ top 1%),* 2022.

[3] **High probability guarantees for stochastic convex optimization**  
Damek Davis and Dmitriy Drusvyatskiy  
*Proceedings of Thirty Third Conference on Learning Theory,* 2020.

[4] **Global Convergence of the EM Algorithm for Mixtures of Two Component Linear Regression**  
Jeongyeol Kwon, Wei Qian, Constantine Caramanis, Yudong Chen, and Damek Davis
Proceedings of the Thirty-Second Conference on Learning Theory, 2019.

[5] The Sound of AP ALM Clapping: Faster Nonsmooth Nonconvex Optimization with Stochastic Asynchronous PALM
Damek Davis, Brent Edmunds, and Madeleine Udell
Neural Information Processing Systems, 2016.

[6] Multi-View Feature Engineering and Learning
Jingming Dong, Nikolaos Karianakis, Damek Davis, Joshua Hernandez, Jonathan Balzer, and Stefano Soatto
The IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2015.

[7] Asymmetric Sparse Kernel Approximations for Large-scale Visual Search
Damek Davis, Jonathan Balzer, and Stefano Soatto
The IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2014.

Book chapters
[1] Convergence rate analysis of several splitting schemes
Damek Davis and Wotao Yin
Splitting Methods in Communication and Imaging, Science and Engineering, 2016.

Lecture notes
[1] Lecture Notes for Mathematical Programming I (ORIE 6300)
Damek Davis
URL: https://people.orie.cornell.edu/dsd95/ORIE6300Fall2019notes.pdf

Newletters
[1] Subgradient methods under weak convexity and tame geometry
Damek Davis and Dmitriy Drusvyatskiy
SIAG/OPT Views and News vol. 28.1 (2020) pp. 1–10.
URL: https://people.orie.cornell.edu/dsd95/ViewsAndNews-28-1.pdf

[2] Convergence Rate Analysis of Several Splitting Schemes
Damek Davis
INFORMS OS Today vol. 5.1 (2015) pp. 20–25.
URL: https://people.orie.cornell.edu/dsd95/OStoday0515.pdf

Invited Talks

November 2023
Leveraging "partial" smoothness for faster convergence in nonsmooth optimization
UPenn Optimization Seminar
Philadelphia, Pennsylvania

August 2023
Leveraging "partial" smoothness for faster convergence in nonsmooth optimization
Rob Freund’s birthday workshop
Cambridge, Massachusetts

June 2023
A nearly linearly convergent first-order method for nonsmooth functions with quadratic growth
Continuous Optimization Workshop, Foundations of Computational Mathematics 2023
Paris, France

June 2023
A nearly linearly convergent first-order method for nonsmooth functions with quadratic growth
SIAM conference on optimization
Seattle, Washington
| Date       | Title                                                                 | Location                        |
|------------|----------------------------------------------------------------------|---------------------------------|
| June 2023  | Stochastic model-based minimization of weakly convex functions        | Seattle, Washington             |
|            | SIAM conference on optimization (prize lecture)                      |                                 |
| April 2023 | Leveraging ``partial'' smoothness for faster convergence in nonsmooth | Seattle, Washington             |
|            | optimization                                                      |                                 |
|            | Distinguished Seminar in Optimization & Data, University of Washingto|                                 |
| February 2023 | Leveraging ``partial'' smoothness for faster convergence in nonsmooth | Pasadena, California            |
|            | optimization                                                      |                                 |
| Fall 2022  | Leveraging ``partial'' smoothness for faster convergence in nonsmooth | Los Angeles, California         |
|            | optimization                                                      |                                 |
| Fall 2022  | Leveraging ``partial'' smoothness for faster convergence in nonsmooth | Los Angeles                     |
|            | optimization                                                      | Seminar, IPAM workshop on computa-|
|            |                                                               | tional microscopy               |
| Fall 2022  | Leveraging ``partial'' smoothness for faster convergence in nonsmooth | Los Angeles                     |
|            | optimization                                                      | Seminar, UCLA Department of Co-  |
|            |                                                               | mputer Science                  |
| Fall 2022  | Leveraging "partial" smoothness for faster convergence in nonsmooth  | Palo Alto, California           |
|            | optimization                                                      | ISL seminar, Stanford           |
| Fall 2022  | Leveraging "partial" smoothness for faster convergence in nonsmooth  | Evanston, Illinois              |
|            | optimization                                                      | Seminar, Northwestern University|
|            |                                                               | Department of Statistics and Da- |
|            |                                                               | ta Science                      |
| Nov 2022   | A nearly linearly convergent first-order method for nonsmooth func-  | Virtual                         |
|            | tions with quadratic growth                                        | OPTML++ seminar, MIT            |
| July 2022  | A nearly linearly convergent first-order method for nonsmooth func-  | Lehigh, Pennsylvania            |
|            | tions with quadratic growth                                        | International Conference on Co- |
|            |                                                               | mputational Optimization        |
| May 2022   | Avoiding saddle points in nonsmooth optimization                    | Erice, Italy                    |
|            | Workshop on Robustness and Resilience in Stochastic Optimization    |                                 |
|            | and Statistical Learning: Mathematical Foundations                  |                                 |
|            | Ettore Majorana Foundation And Centre For Scientific Culture       |                                 |
| February 2022 | Avoiding saddle points in nonsmooth optimization                 | Virtual                         |
|            | Theoretical Computer Science Seminar, University at Illinois, Chi-  |                                 |
|            | cago                                                      |                                 |
| Dec 2021   | Plenary Talk: Avoiding saddle points in nonsmooth optimization      | Virtual                         |
|            | OPT2021 NeurIPS Workshop                                           |                                 |
| Nov 2021   | Avoiding saddle points in nonsmooth optimization                    | Virtual                         |
|            | One World Optimization Seminar                                     |                                 |
| July 2021  | Avoiding saddle points in nonsmooth optimization                    | Virtual                         |
|            | SIAM Optimization Conference                                        |                                 |
| Nov 2020   | Nonconvex Optimization for Estimation and Learning: Dynamics, Con-  | Montreal, Quebec, Canada        |
|            | ditioning, and Nonsmoothness                                       |                                 |
|            | CRM Applied Math Seminar, McGill University                        |                                 |
| June 2020  | Proximal methods avoid active strict saddles of weakly convex func-  | Vancouver, Canada               |
|            | tions                                                          | Foundations of Computational Ma- |
|            |                                                               | thematics (Cancelled due to CO- |
|            |                                                               | VID)                           |
| Date       | Title                                                                                           | Location                        | Details                                                                                           |
|-----------|-------------------------------------------------------------------------------------------------|----------------------------------|---------------------------------------------------------------------------------------------------|
| May 2020  | Stochastic Algorithms with Geometric Step Decay Converge Linearly on Sharp Functions            | Cincinnati, Ohio (cancellation)  | SIAM Mathematics of Data Science (sessions cancelled due to COVID)                                |
| Nov 2019  | Stochastic model-based minimization of weakly convex functions                                  | Seattle, Washington              | INFORMS Optimization Society Young Researchers Award Presentation                                  |
| Nov 2019  | Low-rank matrix recovery with composite optimization: good conditioning and rapid convergence   | Seattle, Washington              | INFORMS Annual Meeting                                                                              |
| Nov 2019  | Stochastic subgradient method converges on tame functions                                        | Seattle, Washington              | INFORMS Annual Meeting                                                                              |
| August 2019 | Stochastic subgradient method converges on tame functions                                      | Berlin, Germany                  | ICCOPT Best Paper Prize for Young Researchers in Continuous Optimization Finalist                  |
| April 2019 | Nonsmooth and nonconvex optimization under statistical assumptions                              | Princeton, New Jersey            | Operations Research and Financial Engineering Optimization Seminar, Princeton University            |
| Sept 2018 | Stochastic Methods for Non-smooth Non-convex Optimization                                       | Urbana-Champaign, Illinois       | Annual Allerton Conference on Communication, Control, and Computing                                |
| Aug 2018  | Algorithmic Foundations of Huge-Scale Nonsmooth, NonConvex Optimization with Applications in Data Science | Arlington, Virginia             | AFOSR Optimization and Discrete Math Program Review                                                |
| Aug 2018  | Stochastic Methods for Non-smooth Non-convex Optimization                                       | Lehigh, Pennsylvania             | TRIPODS/MOPTA Conference                                                                            |
| July 2018 | Convergence rates of stochastic methods for nonsmooth nonconvex problems                        | Bordeaux, France                 | International Symposium on Mathematical Programming (ISMP) (cancelled due to Illness)              |
| June 2018 | Stochastic Methods for Non-smooth Non-convex Optimization                                       | Seattle, Washington              | DIMACS Workshop on ADMM and Proximal Splitting Methods in Optimization (cancelled due to Illness)  |
| May 2018  | Stochastic Methods for Non-smooth Non-convex Optimization                                       | Seattle, Washington              | West Coast Optimization Meeting                                                                      |
| April 2018 | Recent progress on nonsmooth nonconvex optimization under statistical assumptions               | Cambridge, Massachusetts         | Operations Research Center Seminar, MIT                                                              |
| Nov 2017  | Proximally Guided Stochastic Subgradient Method for Nonsmooth, Non-convex Problems              | Houston, Texas                   | INFORMS Annual Meeting                                                                              |
| July 2017 | Trimmed Statistical Estimation via Variance Reduction                                            | Montreal, Quebec, Canada         | EUROPT continuous optimization working group of EURO (The Association of European Operational Research Societies) |
July 2017  A SMART Stochastic Algorithm for Nonconvex Optimization with Applications to Robust Machine Learning  New York, New York
Google Brain Seminar

May 2017  A SMART Stochastic Algorithm for Nonconvex Optimization with Applications to Robust Machine Learning  Los Angeles, California
Applied Mathematics Colloquium, UCLA

May 2017  A SMART Stochastic Algorithm for Nonconvex Optimization with Applications to Robust Machine Learning  Vancouver, Canada
SIAM Optimization Conference

July 2016  Fast Algorithms for Robust Machine Learning  New York, New York
Google Internal Seminar

June 2016  SMART: The Stochastic Monotone Aggregated Root-Finding Algorithm  Waikoloa, Hawaii
INFORMS International Meeting

May 2016  A Three-Operator Splitting Scheme and its Optimization Applications  Albuquerque, New Mexico
SIAM Conference on Imaging Science

Feb 2016  SMART: The Stochastic Monotone Aggregated Root-Finding Algorithm  Madison, Wisconsin
Systems, Information, Learning and Optimization (SILO) Seminar, University of Wisconsin, Madison

Oct 2015  A Three-Operator Splitting Scheme and its Optimization Applications  Seattle, Washington
TOPS Optimization Seminar, University of Washington

July 2015  A Three-Operator Splitting Scheme and its Optimization Applications  Pittsburgh, Pennsylvania
International Symposium on Mathematical Programming (ISMP)

June 2015  Decentralized Optimization via Operator Splitting  Murray Hill, New Jersey
Bell Labs Prize Innovathon @ Alcatel-Lucent

May 2015  A Three-Operator Splitting Scheme and its Optimization Applications  Stanford, California
Linear Algebra and Optimization Seminar, Stanford University

Feb 2015  The Design and Analysis of Large-scale Operator-splitting Schemes  Madison, Wisconsin
Wisconsin Institute for Discovery Colloquium, University of Wisconsin, Madison

Jan 2015  The Design and Analysis of Large-scale Operator-splitting Schemes  Waterloo, Ontario, Canada
Combinatorics and Optimization Seminar, University of Waterloo

Service

Editorial

2022-  Associate Editor  Mathematical Programming

2023-  Associate Editor  Foundations of Computational Mathematics
Conference/Workshop/Seminar organization

2022- Stream co-chair for Nonsmooth Optimization
International Conference on Continuous Optimization
Lehigh University

2020- Cluster co-chair for Continuous Optimization
International Symposium on Mathematical Programing
Beijing, China

2019-2020 Track co-chair for Optimization in Data Science
INFORMS Optimization Society 2020 Meeting
Clemson University

2016 OPT2016 Program Committee Member
Neural Information Processing Systems
Barcelona, Spain

Departmental Service

2023 ORIE Director Appointment Committee
Operations Research and Information Engineering
Cornell University

2021 ORIE Director Reappointment Committee
Operations Research and Information Engineering
Cornell University

2018-2019 COR-OPT Optimization Seminar
Operations Research and Information Engineering
Cornell University

2018-2020, 2022, 2024 Graduate Admissions Committee
Operations Research and Information Engineering
Cornell University

2016, 2021 Masters of Engineering Admissions Committee
Operations Research and Information Engineering
Cornell University

2017-2018 Colloquium Co-organizer
Center for Applied Math
Cornell University

2016, 2020 Colloquium Co-organizer
Operations Research and Information Engineering
Cornell University

Reviews

2020, 2021 Proposal Reviewer
NSF Division of Mathematical Sciences

2014- Article Reviewer
Mathematical Programming Series A/B,
SIAM Journal on Optimization,
Foundations of Computational Mathematics,
Mathematics of Operations Research,
Transactions of the American Mathematical Society,
Set-Valued and Variational Analysis,
Journal of Optimization Theory and Applications,
IEEE Transactions on Automatic Control,
IEEE Signal Processing Magazine

Teaching

Courses
Fall 2023  **ORIE 6300 Mathematical Programming I**  
Dept: Operations Research and Information Engineering  
Lecture notes available at the following link:  
https://people.orie.cornell.edu/dsd95/ORIE6300Fall2019notes.pdf

Fall 2023  **Engineering 1050**  
Dept: Operations Research and Information Engineering

Spring 2022  **ORIE 4740 Statistical Data Mining**  
Dept: Operations Research and Information Engineering

Fall 2021  **ORIE 7391 Selected Topics in Mathematical Programming**  
Cornell University  
Dept: Operations Research and Information Engineering

Spring 2021  **ORIE 6340 Mathematics of Data Science**  
Dept: Operations Research and Information Engineering  
Course materials available at the following link:  
https://www.dropbox.com/sh/bvxav1pc2nr5n6x/AABn7gEfuYY7qD_ZxUQzJwpma?dl=0

Fall 2020  **ORIE 3300 Optimization I**  
Dept: Operations Research and Information Engineering

Fall 2020  **Engineering 1050**  
Dept: Operations Research and Information Engineering

Spring 2020  **ORIE 4740 Statistical Data Mining**  
Dept: Operations Research and Information Engineering

Fall 2019  **ORIE 6300 Mathematical Programming I**  
Dept: Operations Research and Information Engineering  
Lecture notes available at the following link:  
https://people.orie.cornell.edu/dsd95/ORIE6300Fall2019notes.pdf

Fall 2018  **ORIE 3300 Optimization I**  
Dept: Operations Research and Information Engineering

Spring 2018  **Math 2940 Linear Algebra for Engineers**  
Dept: Mathematics

Spring 2017  **ORIE 4350 Introduction to Game Theory**  
Dept: Operations Research and Information Engineering

Fall 2016  **ORIE 6300 Mathematical Programming I**  
Dept: Operations Research and Information Engineering

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**Advising**

**Current PhD Students**

2021– **Tao Jiang**  
*Operations Research and Information Engineering*  
Status: Q Exam Passed  

2020– **Liwei Jiang**  
*Operations Research and Information Engineering*  
Status: A Exam Passed

**Former PhD Students**
2018–2023 **Vasileios Charisopoulos**  
*Operations Research and Information Engineering*  
Status: Degree Obtained  
Next Position: Postdoc (w/ Becca Willet at Univ. of Chicago)

2016–2021 **Mateo Diaz**  
*Computational and Applied Mathematics*  
Status: Degree Obtained  
Next Positions: Postdoc (w/ V. Chandrasekaran and J. Tropp)  
Asst. Prof. at Johns Hopkins (Applied Math)

2017–2021 **Benjamin Grimmer**  
*Operations Research and Information Engineering*  
(Co-adviser: J. Renegar (primary))  
Status: Degree Obtained  
Next Position: Asst. Prof. at Johns Hopkins (Applied Math)

**Doctoral Supervising Committee Member:**  
Si Yi (Cathy) Meng (ORIE), Song (Sam) Zhou (ORIE), Qinru Shi (CAM), Calvin Wylie (ORIE), Miaolan Xie (ORIE), Tonghua Tian (ORIE), Tam Le (Toulouse 1 University Capitole)

**Former MEng Students (ORIE Capstone Project)**

2016–2017 **Kendrick Cancio, Karen Cronk, Alexis Rouge Carrassat**  
Co-adviser: D. Shmoys  
Industry Sponsor: MITRE

Fall 2017 **Henry Zhou, Juan Duran-Vara, Elijah Huang**  
Putnam Investments  
Co-adviser: J. Renegar

2017-2018 **Anne Ng, Antong Su, Charlotte Wang, Umut Yildiz**  
Industry Sponsor: Equifax

2018-2019 **Chenxin Guo, Dajun Luo, Liyang Du, Zuolin Shen**  
Industry Sponsor: Equifax

2019-2020 **Percy Zhao, Iris Zhao, Foster Zhen, Betsy Fu**  
Industry Sponsor: Equifax

2020-2021 **Yixiao He, Xiaoxiang Ma, Yuke Wu, Jiaqi Zhang**  
Industry Sponsor: Pitney Bowes