Arkadi S. Nemirovski
John P. Hunter, Jr. Chair and Professor
Campus Location: Groseclose Building, Suite 446, 404-429-1528
nemirovs@isye/gatech.edu;
Arkadi Nemirovski | H. Milton Stewart School of Industrial and Systems Engineering
Personal Website Nemirovski

RESEARCH AREAS:

- (major) Optimization Theory and Algorithms, with emphasis on
  - ♦ investigating complexity and developing efficient algorithms for nonlinear convex programs
  - ♦ optimization under uncertainty
  - ♦ applications of Convex Optimization in Engineering
- (minor) Nonparametric Statistics

TEACHING INTERESTS:

Graduate courses on:

♦ Convex Optimization Theory and Algorithms, with emphasis on Conic problems

♦ Robust Optimization

♦ Applications of Convex Optimization in Engineering, Signal Processing, and Statistics

EDUCATION:

- M.Sc. ('70) and Ph.D. ('74) degrees in Math. from Moscow State University
Arkadii Nemirovski - The Mathematics Genealogy Project
- Soviet degree of Doctor of Physical & Mathematical Sciences ('90) from the Supreme Attestation Board at the USSR Council of Ministers

PUBLICATIONS:

7 research monographs, 2 graduate textbooks, 160+ papers in referred journals, over 20 papers and book chapters in proceedings and collections

Arkadi Nemirovski - Google Scholar
https://www.webofscience.com/wos/author/record/287317
https://mathscinet.ams.org/mathscinet/author?authorId=194108

RECENT PUBLICATIONS (2022-

Journal papers:

- Juditsky, A., Nemirovski, A. "On well-structured convex-concave saddle point problems and variational inequalities with monotone operators" -- *Optimization Methods and Software* **37:5** (2022), 1567-1602.
  E-print: https://arxiv.org/abs/2102.01002
- Anatoli Juditsky, Arkadi Nemirovski "Aggregating estimates by convex optimization" - *Mathematical Statistics and Learning* **5:1/2** (2022), 55–116.\
  E-print: https://arxiv.org/pdf/2107.07836.pdf
- Anatoli Juditsky, Georgios Kotsalis, Arkadi Nemirovski "Tight Computationally Efficient Approximation of Matrix Norms with Applications" –
  Open Journal of Mathematical Optimization **3:7** (2022), 1-38.
  E-print: https://arxiv.org/pdf/2110.04389.pdf
- Juditsky, A., Nemirovski, A. "On Design of Polyhedral Estimates in Linear Inverse Problems" -- *SIAM Journal on Mathematics of Data Science* **6:1** (2024), 76-96
  E-print https://epubs.siam.org/doi/epdf/10.1137/22M1543331
- Juditsky, A., Nemirovski, A. ``Aggregating regular norms'' -- accepted (2024) to *Israel Journal of Mathematics*,
  E-print: https://arxiv.org/pdf/2210.16664.pdf
- Bekri, Y., Juditsky, A., Nemirovski, A. ``First order algorithms for computing linear and polyhedral
  estimates'' -= *Open Journal of Mathematical Optimization* Volume 5 (2024), article no. 7, 15 p.
  E-print https://ojmo.centre-mersenne.org/articles/10.5802/ojmo.35/
- Bekri, Y., Juditsky, A., Nemirovski, A. (2023) ``Estimation from indirect observations under stochastic uncertainty in observation matrix'' -- *Journal of Optimization Theory and Applications* **205** paper # **56** (2025)
  E-Print: https://arxiv.org/pdf/2309.06563.pdf
- Bekri, Y., Juditsky, A., Nemirovski, A. ``Robust signal recovery under uncertain-but-bounded perturbations in observation matrix'' - to appear in *Journal of Optimization Theory and Applications* **205** paper # **55** (2025)
  E-Print: https://arxiv.org/pdf/2309.06563.pdf
- Bekri, Y., Juditsky, A., Nemirovski, A.``On robust recovery of signals from indirect observations'' -- *Automation and Remote Control* **86:8** (2025), 718–739\\
  E-Print https://arxiv.org/abs/2501.01935

Graduate textbooks:

- Nemirovski,A. Introduction to Linear Optimization} -- World Scientific, 2024
- F. Kilinc-Karzan, A. Nemirovski Essential Mathematics for Convex Optimization Cambridge University Press, 2025

HONORS & AWARDS:

- '82 - *Fulkerson Prize of the Mathematical Programming Society and AMS* (with L. Khachiyan and D. Yudin) [for inventing the Ellipsoid method and thus contributing to the proof of polynomial time solvability of Linear Programming] http://www.mathprog.org/prz/fulkerson.htm#winners
- '91 - *Dantzig Prize of the Mathematical Programming Society and SIAM* (with M. Grötschel) [for contributions to Mathematical Programming, including investigating limits of performance of convex optimization methods and developing novel efficient algorithms] http://www.mathprog.org/prz/dantzig.htm#winners
- '03 - *John von Neumann Theory Prize of INFORMS* (with M. Todd) [for contributions to Mathematical Programming, including those to the general theory of polynomial time interior point methods and to discovery and development of Robust Optimization] https://www.informs.org/Recognizing-Excellence/Award-Recipients/Arkadi-Nemirovski
- '19 - *Norbert Wiener Prize in Applied Mathematics of AMS and SIAM* (with M. Berger) https://www.ams.org/news?news_id=4727
- '23 - *2023 World Laureates Association Prize in Computer Science or Mathematics* (with Yu. Nesterov) https://www.thewlaprize.org/PressRoom/News/2023/11/06/190.html
- '24 - *2024 INFORMS Frederick W. Lanchester Prize* (with A. Juditsky) https://www.informs.org/Recognizing-Excellence/INFORMS-Prizes/Frederick-W.-Lanchester-Prize

Other honors:

- '98 - Lecturer at XXVII Saint-Flour Summer School on Probability and Statistics
- '03 - Medallion Lecturer of IMS, Joint Statistical Meeting
- '06 - Plenary speaker at ICM 2006
- '06 - Plenary speaker at ISMP 2006
- '09 - Honorary Degree of Doctor of Mathematics from University of Waterloo
- '17 - Member of National Academy of Engineering National Academy of Engineering
- '18 - Fellow of American Academy of Arts and Sciences American Academy of Arts and Sciences
- '20 - Member of National Academy of Sciences https://www.nasonline.org/membership/member-directory/?_directory_last_name=Nemirovski&_member_directory_sort=last_name_asc
- '18 - Le Cam Lecture, 50èmes Journées de Statistique de la SFdS, Paris-Saclay 50èmes Journées de Statistique de la SFdS