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Kalyanmoy Deb

Professor & [Koenig
Endowed Chair](#),
[Electrical and
Computer
Engineering
BEACON Center
for the Study of
Evolution in
Action](#), An NSF
Science &
Technology Center
Professor,
[Computer Science
and Engineering](#)
Professor,
[Mechanical
Engineering](#)
Michigan State
University, East
Lansing, MI 48824,
USA

Director,
[Computational
Optimization and
Innovation \(COIN\)
Laboratory](#)

Founder and
Formerly Director
of [Kanpur Genetic
Algorithms
Laboratory](#),
[KanGAL](#), IIT
Kanpur, India



Office: (+1) 517 432
2144
BEACON: (+1) 517
884 2567
Fax: (+1) 517 353
1980
Email: kdeb at
egr.msu.edu

Visits: 3247
Engineering Building
Mailing Address:
Click [here](#)

**Research
interests:**
Non-linear
Optimization,
Many and Multi-
objective
Optimization,
Metamodeling,
Constraint
Handling,
Engineering
Design,
Evolutionary
Algorithms and
Metaheuristics,
Innovization,
Neural Networks,
Data-mining and
Machine learning.

A podcast of [my
research and
development of
NSGA-II](#) recorded by
Science Watch of
Thomson Reuters can
be found here.

Research Impact:

- [Click here](#) for
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[Courses Taught](#)
[Sociometric Superstar](#) of the Evolutionary
Computation field
[Evolutionary Bilevel Optimization](#)

Place your mouse cursor over the ResearcherID
badge below to view a selection of Prof. Deb's
publications on ResearcherID.com. You may also
view additional information regarding his web of
science publications on ResearcherID.com by
clicking [here](#) and [Thomson's research excellence
report](#).

2018: 109,835;
H-Index: 105

- [Microsoft Academic Search](#) (on 31 January 2018): 125,892 Citations, 8th in Artificial Intelligence on Citation, 12th on Field Rating.

Teaching:

- ECE 802-605 Evolutionary Multi-Criterion Optimization and Decision Making
- ECE 802-609 Optimization Methods for Engineering Design
- ECE 480 Capstone Design
- ECE 280 Analytical Methods for Electrical Engineering
- ECE 201 Circuits and Systems I
- ECE 202 Circuits and Systems II

**Top Publications
(by citations):**

- Deb, K., Pratap. A, Agarwal, S., and Meyarivan, T. (2002). A fast and elitist multiobjective genetic algorithm: NSGA-II. IEEE Transaction on Evolutionary

Computation,
6(2), 181-197.
(6,049 ISI citations)

- Deb, K. (2001). Multi-objective optimization using evolutionary algorithms. Chichester, London: Wiley.
(3,301 ISI citations)
- Deb, K. (1995). Optimization methods for engineering design. 2nd Edn. New Delhi: Prentice-Hall.
- Zitzler, E., Deb, K., and Thiele, L. (2000). Comparison of multiobjective evolutionary algorithms: Empirical results. Evolutionary Computation Journal, 8(2), 173-195. **(1,124 ISI citations)**
- Srinivas, N. and Deb, K. (1995). Multiobjective function optimization using nondominated sorting genetic algorithms, Evolutionary Computation Journal, 2(3), 221-248. **(1,061 ISI citations)**
- Deb, K. (2000). An efficient constraint handling method for genetic

algorithms.
Computer
Methods in
Applied
Mechanics and
Engineering,
(186), 2-4, 311-
338. **(1,015 ISI
Citations)**

- Deb, K. (1999).
Multi-objective
Genetic
Algorithms:
Problem
Difficulties and
Construction of
Test Problems
Source:
Evolutionary
Computation
Journal, 7(3),
205-230.**(348
ISI citations)**
- Laumanns, M.,
Thiele, L., Deb,
K. (2002).
Combining
convergence and
diversity in
evolutionary
multiobjective
optimization,.
Evolutionary
Computation
Volume, 10(3),
263-282. **(317
ISI citations)**
- [More.](#)

Recent News:

- Prof. Deb
received
[Outstanding
Researcher
Award](#) from Soft
Computing
Research Society
(SCRS) during
SocPros-2017
Conference held
at IIT
Bhubaneswar in
December 2017.

- Prof. Deb received [Lifetime Achievement Award from Clarivate Analytics](#) on Nov 3, 2017 for his highly cited research contributions. The award citation reads: Professor Deb is recognized for research on multi-objective optimization using evolutionary algorithms, which are capable of solving complex problems across a range of fields involving trade-offs between conflicting preferences. A 2002 paper, with more than 10,000 citations, ranks among the [200 most-cited papers](#) recorded in the Web of Science, 1900-2017, and is by far the most influential paper ever produced by an Indian scientist, as reflected by citations. More information is available [here](#).
- Following papers received Highly-Cited Paper status by Web of Science for receiving enough

citations to place
it in the top 1%
of the academic
field of
Computer
Science based on
a highly cited
threshold for the
field and
publication year,
as of May/June
2017:

- An Evolutionary
Many-Objective
Optimization
Algorithm Using
Reference-Point-
Based
Nondominated
Sorting
Approach, Part I:
Solving
Problems With
Box Constraints
- An Evolutionary
Many-Objective
Optimization
Algorithm Using
Reference-Point
Based
Nondominated
Sorting
Approach, Part
II: Handling
Constraints and
Extending to an
Adaptive
Approach
- Objective
Reduction in
Many-Objective
Optimization:
Linear and
Nonlinear
Algorithms
- Multiple criteria
decision making,
multiattribute
utility theory:
Recent
accomplishments
and what lies
ahead
- Prof. Deb's

[Google Scholar Citations](#) have now passed 100,000 mark with h-index of 103.

- Prof. Deb and Himanshu Jain's NSGA-III paper receives [IEEE Transactions on Evolutionary Computation Outstanding Paper Award](#). The award-winning paper is the [fourth most popular downloaded article](#) of the journal since its inception in 1997. Note Deb's NSGA-II paper (IEEE TEC 2002) is still the highest downloaded paper from the same journal.
- Prof. Deb's [Google Scholar Citations](#) have passed 100,000 mark on 18 April 2017.
- Prof. Deb and Himanshu Jain's NSGA-III paper (2014) has been awarded '2017 [IEEE Transactions on Evolutionary Computation Outstanding Paper Award](#)' by IEEE Computational Intelligence Society (CIS). This award is given to a paper

selected based on citation count of all published papers in IEEE Tran. on Evolutionary Computation two years before.

- Prof. Deb has reached three-digit h-index of 100 according to Google Scholar. He is an EC researcher with the second-highest h-index and 48th in World ranking of Computer Science and Electronics.
- Prof. Deb is Most-Cited Researcher in "Evolutionary Computation" according to Google Scholar.
- Prof. Deb is Most-Cited Researcher in "Multi-objective Optimization" according to Google Scholar.
- Prof. Deb is Fourth Most-Cited Researcher in "Optimization" according to Google Scholar.
- Prof. Deb is 8th Most-Cited Researcher in "Machine Learning" according to Google Scholar.
- Prof. Deb's NSGA-II and NSGA-III papers are Two "Top-most Popular"

[IEEE
Transaction of
Evolutionary
Computation](#)
articles. NSGA-II paper is also the [Most-Cited paper](#) of this journal (more than double citations over second most-cited paper).

- Prof. Deb's NSGA and ZDT papers are [Two "Top-Most Cited" Evolutionary Computation Journal \(MIT Press\)](#) articles. Out of top 10 most-cited papers, four papers are authored by Prof. Deb.
- Prof. Deb's Constrained handling paper is [Second "Most-Read" article of "Engineering Optimization" Journal](#) (Taylor & Francis).
- Prof. Deb's NSGA-II paper (IEEE Trans. on Evolutionary Computation) is the only research paper published from India to have 6,000+ Web of Science Citations. See a [newspaper article](#) and a [magazine article](#).
- Prof. Deb has been invited to become

Honorary Life
Member of the
[Soft Computing
Research
Society](#).

- Prof. Deb has been elevated to [ASME Fellow](#) in December 2013.
- Prof. Deb receives [Distinguished Lecturer Award](#) from IEEE CIS for 2014-2016.
- Announcement of Prof. Deb's [Koenig Endowed Chair Professor](#) position at MSU
- Prof. Deb receives [Honorary Doctorate Degree](#) from the University of Jyvaskyla, Finland in August 2013. More photos [here](#) and [here](#).
- Dr. Oliver Chikumbo, Prof. Kalyanmoy Deb and Prof. Erik Goodman receive the [Wiley Practice Prize 2013](#).
- Prof. Deb has been awarded [TWAS Prize in Engineering Sciences](#) from The World Academy of Sciences (TWAS) in Buenos Aires, Argentina on 2 October 2013.
- NSGA-II paper selected as the Most Cited Paper

among all papers published during January 2000 to August 2010 by a resident Indian author in all 22 disciplines indexed by Thomson Reuters.

- Prof. Deb has been awarded the 'Infosys Prize in Engineering and Computer Science' from Infosys Science Foundation, Bangalore, India for his contributions to the emerging field of Evolutionary Multi-objective Optimization.
- Prof. Deb's 2002 IEEE TEC paper on NSGA-II is declared as a [Current Classic and Most Highly Cited Paper](#) by Science Watch of Thomson Reuters in June 2002.
- [More.](#)

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