

Caleb Xavier Bugg

Industrial and Systems Engineering (ISyE)
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Current Appointments

The Georgia Institute of Technology
Jerry and Harriet Theusen Postdoctoral Fellow
H. Milton Stewart School of Industrial and Systems Engineering
2022–2023

Education

Ph.D. Operations Research, The University of California, Berkeley, 2022.
Designated Emphasis in Development Engineering
M.S. Operations Research, The University of California, Berkeley, 2018.
B.S. Mathematics, Morehouse College, 2017.
Minor in Economics

Previous Appointments

The Brookings Institute
Research Internship, Africa Growth Initiative
Global Economy and Development Program
Summer 2022

The American Institute for Economic Research (AIER)
Visiting Scholar (Graduate Level)
“Engineering Insights for a Free-Market Economy”
Advisor: Dr. Robert Wright
Summer 2021

Argonne National Laboratory (ANL)
Givens Fellow (Graduate-Level)
“Biobjective Optimization with Chance Constraints”
Advisor: Dr. Matt Menickelly
Summer 2019

University of Michigan (Ann Arbor, MI)

UM Transportation Research Institute (Summer 2016)

Advisor: Robert Hampshire, Ph.D.

“Qualitative Preferences in OLS Regression Analysis”

Mathematical Sciences Research Institute (Berkeley, CA)

Research Experience for Undergraduates at MSRI (Summer 2015)

Advisor: Francis Edward Su, Ph.D.

“Committee Selection with Approval Voting and Hypercubes”

Academic Awards

NSF Research Traineeship (NRT) Fellow

NSF Innovations at the Nexus of Food, Water, and Energy Systems (InFEWS)

Spring 2020-Spring 2022

Mentored Research Award

Graduate Division of UC Berkeley

Academic Year 2021-2022

Global Young Scientists Summit

Nominee from the College of Engineering

University of California, Berkeley

Grassi Fellow

Department Fellowship Program [Spring 2020]

Manufacturing, Industrial Systems, and Service Systems

Industrial Engineering and Operations Research (IEOR)

University of California, Berkeley

Grassi Endowment

First-year Fellowship Program [AY 2017-2018]

Manufacturing, Industrial Systems, and Service Systems

Industrial Engineering and Operations Research (IEOR)

University of California, Berkeley

Publications

Peer-Reviewed Journal Articles

Bugg, Caleb, and Anil Aswani. “Logarithmic sample bounds for Sample Average Approximation with capacity-or budget-constraints.” *Operations Research Letters* 49.2 (2021): 231-238. [Publication link](#).

Conference Papers

Bugg, Caleb, Chen Chen, and Anil Aswani. "Nonnegative Tensor Completion via Integer Optimization." Accepted for the 2022 *Conference on Neural Information Processing Systems (NeurIPS)*. [ArXiv link](#).

Working Papers

Caleb Bugg. "A Principal Agent Model for the Adoption of Healthful Foods and Beverages". Under Preparation for Submission to the *Journal of Health Economics*.

Presentations

2022 Conference on Neural Information Processing Systems (NeurIPS)

"Nonnegative Tensor Completion via Integer Optimization"

November 2022

INFORMS Annual Conference

"Nonnegative Tensor Completion with Healthcare Applications"

October 2022

Conference for African-American Researchers in the Mathematical Sciences

"Biobjective Optimization with Chance Constraints"

July 2019

Research Interests

stochastic optimization, operations research and management, economic decision analysis

Teaching Experience

The University of California, Berkeley, Department of Industrial Engineering and Operations Research, Graduate Student Instructor (GSI), 2018–2021.

Courses taught:

IEOR 115: Industrial and Commercial Database Systems (undergraduate level)

IEOR 265: Learning and Optimization (graduate level)

ENG 120: Engineering Economics (undergraduate level)

Course	Position	Semester	Instructor Rating	College-wide Median	Response Rate
IEOR 265	GSI and Guest Instructor	Spring 2021	4.20	4.22	10/35
IEOR 115	GSI and Guest Instructor	Fall 2020	4.39	4.27	28/93
IEOR 265	GSI	Spring 2020	4.30	3.95	10/33
IEOR 115	GSI	Fall 2019	3.69	3.94	28/71
ENG 120	GSI	Spring 2019	3.50	4.14	26/143
IEOR 115	GSI	Fall 2018	3.89	3.88	29/67

Service and Memberships

The Black Graduate Engineering and Science Students (BGESS)

Internal Vice President

Academic Yrs. 2020-2021, 2021-2022

The University of California, Berkeley

National Society of Black Engineers (NSBE)

Member

Spring 2019-Present

Informs Minority Issues Forum (MIF)

Member

Fall 2018-Present

National Association of Mathematicians (NAM)

Member

Fall 2016-Present

Honorary Societies

Phi Beta Kappa Academic Honor Society

Senior Inductee (Spring 2017)

Pi Mu Epsilon Mathematics Honor Society

Sophomore Inductee (Spring 2015)

References

Gian-Gabriel Garcia, Ph.D.

Assistant Professor, Industrial and Systems Engineering
The Georgia Institute of Technology
giangarcia@gatech.edu

Anil Aswani, Ph.D.

Graduate School Faculty Advisor
Associate Professor, Industrial Engineering and Operations Research
University of California, Berkeley (Berkeley, CA)
Cooperative Research Area: Statistical Learning Theory
aaswani@berkeley.edu

Ken Goldberg, Ph.D.

Graduate School Chair
Professor, Industrial Engineering and Operations Research
William S. Floyd Jr. Distinguished Chair in Engineering
University of California, Berkeley (Berkeley, CA)
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Ilan Adler, Ph.D.

Chancellor's Professor, Industrial Engineering and Operations Research
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Alper Atamturk, Ph.D.

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