

**RAM BALA**  
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## Highlights

### *Technical experience*

- Published extensively in prestigious journals across fields: *Management Science, Marketing Science, Nature, The Lancet*
- Cutting-edge specialist in algorithmic pricing, marketplace & supply chain optimization
- Deployed ML & optimization pipelines in cloud-based environments: *AWS, GCP*
- Flexible in marshalling technology for data science: *Python, R, Spark, Hive, Elastic*

### *Leadership experience*

- Highly rated coach for senior executives in data science & machine learning
- Experience with pitching data science for fundraising and strategic business initiatives
- Built cross-country teams of 10+ data scientists and data engineers
- Co-founded and led a graduate program in supply chain analytics
- Co-founder and President of non-profit organization focused on data science for humanitarian purposes

## Experience

### **C.H. Robinson, San Jose, CA**

*Head of Parcel Marketplace Optimization. Jan 2019-Present*

Lead an advanced data science team at C.H. Robinson, the largest third-party logistics (3PL) firm in North America, focused on building a next-generation digital marketplace for parcel shipping.

Key achievements:

- Embedded a combinatorial optimization algorithm in a product that allows business users to evaluate, within seconds, the optimal parcel carrier mix for their demand portfolio and the consequent routing guide for each type of package.
- Built a predictive Bayesian learning model that can predict a delivery date at the point of order with 95% accuracy and can be easily deployed in online shopping cart systems.
- Deployed an automated pricing algorithm for a logistics marketplace that improved “net revenue” by 50%.

### **GrandCanals Inc, Los Gatos, CA (acquired by C.H. Robinson)**

*Chief Data Scientist, Jan 2017-Dec 2018*

Joined the company when it was a Series A startup until its acquisition by C.H. Robinson. Built the data science team and product to a level where it became a key asset in the acquisition.

### **Project Stanley**

*Co-founder & President, April 2020-Present*

Co-founded Project Stanley, a 501(c)(3) non-profit organization, in the wake of the Covid-19 pandemic to use data science and cloud-based technology to solve humanitarian problems at scale. Our volunteer team built the following major products:

- An automated matching algorithm delivered as a cloud-based service that allowed [GetUsPPE](#) to match more than 10 million units of PPE from donors to healthcare facilities that need it the most. The work was published in Nature: <https://www.nature.com/articles/s41746-020-00375-3> and received several media mentions:
  - Time Magazine: <https://time.com/5823983/coronavirus-ppe-shortage/>
  - Supply Chain Dive: <https://www.supplychaindive.com/news/ppe-supply-chain-sourcing-procurement-n95-gloves-shortage/594813/>

- A resume-job matching service based on Natural Language Processing (NLP) deployed at State Employment Agencies. The online service delivers thousands of matches per day.

### **Leavey School of Business, Santa Clara University, Santa Clara, CA**

*Associate Professor (with tenure), Business Analytics, Sep 2017-Present*

*Assistant Professor, Business Analytics, Jan 2012- Aug 2017*

- Co-founded and led the MS in *Supply Chain Management & Analytics*. Launching the program involved identifying the market need, designing the curriculum and formulating the marketing strategy. Leading the program included advisory board outreach, design of marketing collateral, student recruiting, and acquisition and support of student consulting projects at multiple Silicon Valley companies.
- Starting 2016, created and taught an MBA core course (both in-class and online) on Machine Learning. This course has been extremely successful and will become a template for teaching machine learning to managers. Ratings in the 99<sup>th</sup> percentile across all Leavey School faculty.
- Published in top-tier journals (< 10% acceptance rate) in algorithmic pricing, advertising analytics and supply chain data science.
- Taught highly rated courses in Operations Management, Supply Chain Management and Business Analytics to MBA, MS and undergraduate students.
- Acted as expert reviewer for top journals in the field; Editorial Board of Journal of Revenue & Pricing Management.

### **Indian School of Business, Hyderabad, India**

*Assistant Professor, Operations & Supply Chain Management, Feb 2006-Jan 2012*

- Second full-time tenure-track faculty member in Operations & Supply Chain Management at a startup education institution established by Kellogg, Wharton and McKinsey.
- Built the Operations group into the best research group of its kind in the Asia-Pacific region.
- Managed faculty recruiting at a growing startup school: hired 5+ faculty members
- Head of the honor code committee tasked with governance of ethics violations by students in courses and projects.

### **Health Products Research (now Syneos Health), Somerset, NJ**

*Senior Analyst, Strategic Planning, Aug 2004-Apr 06*

- Client Management: worked on sales and marketing effectiveness projects involving significant quantitative analysis for several large pharmaceutical clients
- Model Development: built several product modules for forecasting, sales force territory design and promotional mix optimization using SAS and Cplex

### **Tata Technologies, Bombay, India**

*Software Consultant, Aug 1998- Jul 99*

- Designed and programmed several financial transaction processing modules for Tata Motors

## **EDUCATION**

### **UCLA Anderson School of Management, Los Angeles, USA**

*Ph.D., Operations Research, 1999-04*

### **Indian Institute of Technology, Bombay, India**

*B. Tech, Mechanical Engineering, 1994-98*

## Detailed Research Profile

### RESEARCH

#### Publications

1. He, Shuhan, Ram Bala, Ravi Anupindi, Megan L Ranney (2021), “Effective supply chain surveillance for PPE”. *The Lancet*, vol. 397, 1706-1707.
2. Bala, Ram, Charlotte Lee, Benjamin Pallant, Maahika Srinivasan, Daniel Lurie, Rohit Jacob, Neeraj Bhagchandani, Megan Ranney, Shuhan He (2021), “Algorithmic matching of personal protective equipment donations with healthcare facilities during the COVID-19 pandemic”. *npj Digital Medicine*, 4(1) 1-6.
3. Bala, Ram, Shuhan He and Megan Ranney (2021), “How the Biden administration can better distribute Covid-19 vaccinations”. *Boston Globe*, Jan 22, 2021.
4. Yenipazarli, Arda, Asoo Vakharia and Ram Bala (2020), “Life-Cycle Approach to Environmental Innovation: Cost Structure, Advertising, and Competition”. *Decision Sciences*. 51(4), 1015-1045.
5. Agarwal, Narendra and Ram Bala (2019), “Commercialization Pilot Analysis”. *California Governor’s Office for Planning and Research*. August 9, 2019.
6. Jain, Aditya and Ram Bala (2017), “Service Differentiation and Capacity Strategy for Joint Product-Service Offerings”. *European Journal of Operational Research*. 266 (3), 1025-1037.
7. Bala, Ram, Pradeep Bhardwaj and Pradeep Chintagunta (2017), “Product Recalls, Category Effects and Competitor Response”. *Marketing Science*. 36 (6), 931-943.
8. Bala, Ram, Sumit Kunnumkal and Milind Sohoni (2016), “Evergreening and Operational Risk under Price Competition”. *Naval Research Logistics*. 63(1) 71-89.
9. Bala, Ram and Pradeep Bhardwaj (2014), “Direct-to-Consumer Advertising”. *Wiley Encyclopedia of Management, Third Edition – Marketing Volume*. Wiley, USA. **(Invited article)**
10. Bala, Ram (2014), “Book Review - Value & worth: Creating new markets in the digital economy”. *Journal of Revenue and Pricing Management*. 13(2) 158-159. **(Invited article)**
11. Bala, Ram, V. Krishnan and Wenge Zhu (2014), “Distributed Development & Product Line Decisions”. *Production and Operations Management*. 23(6) 1057-1066.
12. Bala, Ram, Pradeep Bhardwaj and Yuxin Chen (2013), “Offering Pharmaceutical Samples: The Role of Physician Learning & Patient Payment Ability”. *Marketing Science*. 32(3) 522-527.
13. Bala, Ram (2012), “Pricing Online Subscription Services under Competition”. *Journal of Revenue and Pricing Management*. 11(3) 258-273.
14. Mehra, Amit, Ram Bala and R. Sankaranarayanan (2012), “Competitive Behavior-Based Price Discrimination for Software Upgrades”. *Information Systems Research*. 23(1) 60-74.

15. Bala, Ram and Scott Carr (2010), "Usage-based Pricing of Software Services under Competition". *Journal of Revenue and Pricing Management*. **9**(3) 204-216.
16. Bala, Ram and Pradeep Bhardwaj (2010), "Detailing vs. Direct-to-Consumer Advertising in the Prescription Pharmaceutical Industry". *Management Science*. **56**(1) 148-160.
17. Bala, Ram and Scott Carr (2009), "Pricing Software Upgrades: The Role of Product Improvement and User Costs". *Production and Operations Management*. **18**(5) 560-580.

### **Invited Presentations**

1. *Leavey School of Business, Santa Clara University*, March 2021. "Blitzscaling during the pandemic: how data, technology and AI are transforming humanitarian operations"
2. *Ross School of Business, University of Michigan, Ann Arbor*, December 2019. "Digital Marketplace for Logistics".
3. *University of Chile*, December 2016. "Green product strategies under competition"
4. *Warrington College of Business, University of Florida*, February 2016. "Delayed Payments in Supply Chains: The Role of Moral Hazard vs. Bankruptcy".
5. *Lally School of Management, Rensselaer Polytechnic Institute*, February 2016. "Delayed Payments in Supply Chains: The Role of Moral Hazard vs. Bankruptcy".
6. *Katz School of Business, University of Pittsburgh*, January 2016. "Delayed Payments in Supply Chains: The Role of Moral Hazard vs. Bankruptcy".
7. *College of Business Administration, University of Central Florida*, November 2015. "Delayed Payments in Supply Chains: The Role of Moral Hazard vs. Bankruptcy".
8. *Paul Merage School of Business, UC Irvine*, October 2015. "Delayed Payments in Supply Chains: The Role of Moral Hazard vs. Bankruptcy".
9. *Leavey School of Business, Santa Clara University*, June 2011. 'Competition, Capacity and Evergreening'
10. *London Business School*, April 2011. 'Competition, Capacity and Evergreening'
11. *University College London*, April 2011. 'Competition, Capacity and Evergreening'
12. *Novartis India*, June 2010. 'The Patent Expiration Challenge: How Should Pharmaceutical Firms Respond?'
13. *Sauder School of Business, University of British Columbia*, May 2010. 'Distributed Development and Product Line Decision Making'.
14. *Insead, Singapore*, September 2009. 'Distributed Development and Product Line Decision Making'.

15. *Rady School of Management, UC, San Diego*, April 2007. 'Detailing versus DTCA in the prescription pharmaceutical industry'.
16. *Indian School of Business, Hyderabad, India*, September 2005. 'Pricing and market segmentation for software upgrades'.
17. *Kellogg School of Management, Northwestern University*, January 2005. 'Pricing and contracting strategies for software products and services'.
18. *Southern Methodist University, Dallas, TX – USA*, April 2004. 'The market implications of product-process choice in the software industry'.
19. *Simon Fraser University, Vancouver, BC – Canada*, March 2004. 'The market implications of product-process choice in the software industry'.
20. *Singapore Management University, Singapore*, March 2004. 'The market implications of product-process choice in the software industry'.
21. *Health Products Research, Whitehouse, NJ – USA*, March 2004. 'The market implications of product-process choice in the software industry'.

#### **Refereed Conference Presentations**

1. 'Accentuate or Architect? Green product strategies under competition'. *MSOM Conference*, Seattle, June 2014
2. 'Competitive Advertising Strategies for Internet Retailers. *Utah Product and Service Innovation Conference*, Utah, February 2012
3. 'Competitive Advertising Strategy for Internet Retailers'. *Conference on Information Systems and Technology (CIST)*, Charlotte, Nov 2011.
4. 'Competition, Capacity and Evergreening'. *MSOM Conference*, Ann Arbor, June 2011
5. 'Distributed Development and Product Line Decision Making'. *Production and Operations Management Conference*, Vancouver, May 2010.
6. 'Software upgrades with price competition'. *Conference on Information Systems and Technology (CIST)*, Washington D.C., Oct 2008.
7. 'Detailing versus DTCA in the prescription pharmaceutical industry'. *UTD Marketing Science Conference*, Dallas, February 2008
8. 'Software upgrades with price competition'. *Workshop on Information Systems and Economics (WISE)*, Montreal, Dec 2007
9. 'Metered pricing of software services under competition'. *MSOM Conference*, Atlanta, June 2006

### **Other Conference Presentations**

- ‘Automated donor-recipient PPE matching for GetUsPPE’. INFORMS Conference, November 2020
- ‘Capacity Investment for Product Upgrades under Competition’. POMS Conference, Seattle, May 2017
- ‘Green product strategies under competition’. POMS Conference, Seattle, May 2017
- ‘Delayed Payments in Supply Chains: The Role of Moral Hazard vs. Bankruptcy’. POMS Conference, Seattle, May 2017
- ‘Capacity Investment for Product Upgrades under Competition’. INFORMS Conference, Nashville, November 2016
- ‘Product Recalls, Category Effects and Competitor Response’. INFORMS Conference, Philadelphia, November 2015
- ‘Operational Investment and the Reverse Factoring Decision’. INFORMS Conference, San Francisco, November 2014
- ‘Competitive Advertising Strategy for Internet Retailers’. *INFORMS Conference*, Minneapolis, October 2013
- ‘Competition, Capacity and Evergreening’. *POM Conference*, Chicago, April 2012
- ‘Integrated vs. Dedicated: Service System Design for a Vertically Differentiated Product Line’. *POM Conference*, Chicago, April 2012
- ‘Offering Pharmaceutical Samples: The Role of Physician Learning and Patient Payment Ability’. *Marketing Science Conference*, Houston, June 2011.
- ‘Advertising Strategy for Internet Retailers’. *Marketing Science Conference*, Cologne, Germany, Jun 2010.
- ‘Advertising Strategy for Internet Retailers’. *INFORMS Conference*, San Diego, Oct 2009.
- ‘Global Product Design’. *INFORMS Conference*, Washington D. C., Oct 2008.
- ‘Offering Pharmaceutical Samples: The Role of Physician Learning & Insurance Coverage’. *INFORMS Conference*, Washington D. C., Oct 2008.
- ‘Software upgrades with price competition’. *International Symposium of Information Systems (ISIS)*, Hyderabad, Dec 2007.
- ‘Pricing software upgrades: The role of product improvement & user costs’. *International Symposium of Information Systems (ISIS)*, Hyderabad, Dec 2007.

- ‘Detailing versus DTCA in the prescription pharmaceutical industry’. *Marketing Science Conference*, Singapore, Jun 2007.
- ‘Renting of software services under competition’. *ISB-IBM Workshop on OR Analytics*, Hyderabad, Feb 2007.
- ‘Usage-based pricing of software service under competition’. *International Symposium of Information Systems (ISIS)*, Hyderabad, Dec 2006.
- ‘Renting of software services under competition’. *Marketing Science Conference*, Pittsburgh, Jun 2006.
- ‘Renting of software services under competition’. *INFORMS Conference*. Denver, Oct 2004
- ‘Metered pricing of software services under competition’. *INFORMS Conference*. Atlanta, October 2003
- ‘Pricing and market segmentation for software upgrades’. *INFORMS Conference*. San Jose, November 2002

## **MEDIA APPEARANCES**

- “The PPE supply chain is a case of haves and have-nots”. *Supply Chain Dive*. Feb 2021
- “Covid-19 Vaccination”. KNX1070 Los Angeles. January, 2021
- “Better Data Science, Better Societies”. *Tech for Good*. July, 2020
- “Edible bar code to crack down on counterfeits”. *NBC Bay Area*. January 9, 2013
- “Pushing western medicine with fear in India”. *Reuters Health*, June 7, 2011

## **TEACHING**

### *Santa Clara University*

Teaching ratings at the 99<sup>th</sup> percentile of all faculty at the Leavey School

MBA core course: “Business Analytics”, 2017-Present

MS-SCMA core course: “Supply Chain Foundations”, 2016-Present

MBA elective: “Supply Chain Management”, 2014-Present

MBA core course: “Operations Management”, 2013-Present

Undergraduate core course: “Operations Management”, 2011-13

Undergraduate honors core course: “Operations Management”, 2011-14

### *Indian School of Business*

MBA core course: “Operations Management”, 2006-11

MBA elective: “Managing Product & Service Development”, 2006-09

Faculty advisor for 11 MBA student Experiential Learning Projects (ELP)

Executive Education for Accenture: Quantitative Project Management, Operations Strategy

## **PROFESSIONAL SERVICE**

### **Editorial Board Member (2013 & 2014)**

- Journal of Revenue and Pricing Management

### **Referee work for top tier journals (since 2006)**

- Management Science
- Operations Research
- Marketing Science
- Information Systems Research
- Production & Operations Management
- MIS Quarterly
- European Journal of Operational Research
- Decision Science
- Applied Stochastic Models for Business and Industry
- Electronic Commerce Research Journal
- British Medical Journal
- Transportation Research
- Sustainability
- Economic Modelling

### **Referee work for top tier conferences**

- IEEE Conference of Automation Science and Engineering 2010
- International Conference on Information Systems 2013

### **Chair / Judge for top tier conferences**

- Chair for an invited session at POMS 2017
- Chair for “New Product Development” cluster at INFORMS 2014
- Chair for an invited session at INFORMS 2013
- Chair for an invited session at POMS 2012.
- Chair for contributed papers sessions at INFORMS 2002 and 2003
- Chair for a sponsored session at INFORMS 2004.

### **Chair / Judge for Industry conferences**

- Moderator at the ISB Leadership Summit, ISB, 2010



- Judge at the Health Care Conclave Business Case Competition, ISB, 2010
- Moderator at Responsible Supply Chains Conference, Stanford University, 2014

## **INSTITUTIONAL SERVICE**

### *Santa Clara University*

- Member of School Rank & Tenure committee, 2020-Present
- Member of Undergraduate Leadership committee (ULT), 2019-20
- Co-founder & Director, MS in Supply Chain Management & Analytics, 2015-2018
- Co-chair of the “4<sup>th</sup> Annual Supply Chain Management Directors’ Conference” at Santa Clara University, March 2015
- Faculty coordinator for the Supply Chain Management Concentration, 2012-Present
- OMIS area coordinator for the “Chair Seminar Series”, 2012-2013

### *Indian School of Business*

- Member of the Academic Committee, 2006-07
- Member of the Honor Code Committee, 2007-2011
- Seminar coordinator for the “Operations Management Seminar Series”, 2007-2011