

# Senthil K. Veeraraghavan

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## Education

Ph. D., Operations Management & Manufacturing, Carnegie Mellon University. 2004.

*Dissertation:* Supply Choice and Capacity Decisions Under Uncertainty.

Recipient, *William W. Cooper Award* for the best dissertation in Management or Management Science.

*Advisor:* Prof. Alan Scheller-Wolf.

MSIA., Operations Management, Carnegie Mellon University. 2001.

B.Tech. and M. Tech., Mechanical Engineering, Indian Institute of Technology. Bombay, India. 1999.

## Academic Experience

Associate Professor of OPIM, University of Pennsylvania, The Wharton School. July 2011 – Present.

Assistant Professor of OPIM, University of Pennsylvania, The Wharton School. 2004 – June 2011.

## Research

### ***Publications***

1. Veeraraghavan, S. and A. Scheller-Wolf. 2008. Now or Later: A Simple Policy for Effective Dual Sourcing in Capacitated Systems. *Operations Research*, Vol. 56, Issue 4, pp. 850–864.
2. Veeraraghavan, S. and L. Debo. 2009. Joining Longer Queues: Information Externalities in Queue Choice. *M&SOM*, Vol 11, No. 4, pp. 543–562.
  - Lead Article.
  - Finalist, 2007 INFORMS Junior Faculty paper competition.
3. Jerath, K., S. Netessine and S. Veeraraghavan. 2010. Revenue Management with Strategic Customers, Last Minute Selling and Opaque Selling. *Management Science*, Vol. 56, No. 3, pp. 430–448.
4. Kim, S., M. A. Cohen, S. Netessine and S. Veeraraghavan. 2010. Contracting for Infrequent Restoration and Recovery of Mission-Critical Systems. *Management Science*, Vol. 56, No. 9, pp. 1551–1567.
5. Anand, K., M. Paç and S. Veeraraghavan. 2011. Quality - Speed Conundrum: Tradeoffs in Customer-Intensive Services. *Management Science*, Vol. 57, No. 1, pp. 40–56.
  - Finalist, 2009 INFORMS Junior Faculty paper competition.
6. Veeraraghavan, S. and L. Debo. 2011. Herding in Queues with Waiting Costs: Rationality and Regret. *M&SOM*, Vol. 13, No. 3, pp. 329–346.
7. Tereyağoğlu, N. and S. Veeraraghavan. 2011. Selling to Conspicuous Consumers: Pricing, Production and Sourcing Decisions. Forthcoming at *Management Science*.
8. Veeraraghavan, S. and R. Vaidyanathan. 2010. Measuring Seat Value in Stadiums and Theaters. Forthcoming at *Production and Operations Management*.

### ***Published Book Chapters***

9. Debo, L. and S. Veeraraghavan. 2009. Models of Herding Behavior in Operations Management. Chapter in *Consumer-Driven Demand and Operations Management Models*, pp. 81–114, (eds. S. Netessine and C. Tang). Springer Series in Operations Research and Management Science.
10. Jerath, K., S. Netessine and S. Veeraraghavan. 2009. Selling to Strategic Customers: Opaque Selling Strategies. Chapter in *Consumer-Driven Demand and Operations Management Models*, pp. 253–300, (eds. S. Netessine and C. Tang). Springer Series in Operations Research and Management Science.

### ***Papers Under Review***

11. Debo, L., U. Rajan and S. Veeraraghavan. 2012. Signaling by Price in a Congested Environment.
12. Debo, L. and S. Veeraraghavan. 2012. Equilibrium in Queues under Unknown Service Times and Service Value.
13. Janakiraman, G., M. Nagarajan and S. Veeraraghavan. 2012. Simple Policies for Managing Flexible Capacity. Under review.

### ***Working Papers***

14. Tereyagoglu, N., P. Fader and S. Veeraraghavan. 2012. Filling Seats at a Theater: Estimating the Impact of Posted Prices and Dynamic Discounts. Wharton Working Paper.
15. Fazil M. Pac and S. Veeraraghavan. 2012. Strategic Diagnosis and Pricing in Expert Services. Wharton Working Paper.
16. Debo, L. and S. Veeraraghavan. 2011. Prices and Congestion as Signals of Quality. Under Revision. Formerly titled "Firm Service Rate Selection when Service Rates are not Observable and Service Value is Unknown to the Market".
17. Scheller-Wolf, A., S. Veeraraghavan and G. J. van Houtum. 2009. Effective Dual Sourcing with a Single Index Policy. Working Paper.
18. Catalán, A., G. Cachon and S. Veeraraghavan. 2010. Speculative Behavior in a Queue. Working Paper.

### ***Manuscripts under Preparation***

19. Signaling Service Speed through Advertising, with Jaelynn Oh.
20. Carbon Footprint in Electronic Book Supply Chain (Data collection in Progress).
21. Learning Service Quality by Observing Service Outcomes, with Refael Hassin and Laurens Debo.

### ***Refereed Conference Proceedings***

- Only refereed conferences that require submission of full papers are listed below.
- Papers eventually reviewed/published in journals.

22. Anand, K., M. Paç and S. Veeraraghavan. 2009. Quality - Speed Conundrum: Tradeoffs in Labor Intensive Services. Service SIG Conference, MIT Boston, MA. Acceptance Rates: 20-25% (Paper Discussant - Dr. Francis de Véricourt, ESMT). A later version of this paper was published (listed above as #??).
23. Veeraraghavan, S. and L. Debo. 2008. Is it Worth the Wait? Service Choice and Externalities When Waiting is Expensive. First Service SIG Conference, College Park, MD. Acceptance Rates: 20-25% (Paper Discussant - Dr. Assaf Zeevi, Columbia University). Some results from the paper are presented in #??.

### **Ongoing Research Projects**

Symphony Orchestra, Pricing and Discounting. With Necati Tereyağoğlu.

Pricing Services (Tickets, Coupons, Passes and “Forever” Stamps): Operational impact of various schemes of pricing services. With Morris Cohen, OPIM Department Wharton School.

Pricing Credence/Expert Services. With M. Fazil Paç.

## **Research Honors, Awards & Fellowships**

### **Honors and Awards**

Management Science Distinguished Service Award, 2010.

INFORMS Junior Faculty Paper Competition Finalist, 2009.

Management Science Meritorious Service Award, 2009.

M&SOM Distinguished Service Award, 2008.

INFORMS Junior Faculty Paper Competition Finalist, 2007.

Tepper School of Business, CMU Doctoral Teaching Award, 2004.

William W. Cooper Doctoral Dissertation Award, 2004.

Carnegie Bosch Institute Fellowship, 2003–2004.

William Larimer Mellon Fellowship, Carnegie Mellon University, 1999–2002.

INFORMS Doctoral Colloquium Nominee, 2003.

Means and Merit Scholarship, Indian Institute of Technology, Bombay, 1995–1999.

### **Research Grants and Awards**

Dean’s Research Fund, 2011 (\$5,000).

Wharton Sports Business Initiative Grant, 2008 (\$10,000).

Fishman-Davidson Grant for Study on Revenue Management for Arts, 2008, 2009 (\$25,000).

Mack Center Technological Innovation Grant for Research on Opaque Selling, 2007 (\$12,000).

Wharton School WeBI Grant, 2006–2007 (\$8,000).

Carnegie Mellon GSA Conference Grant, 2002.

## **Advising and Academic Service**

### **Dissertation Committees/Advising**

Necati Tereyagoglu, 2012 (expected). Accepted Academic Position at *Georgia Tech*.

Mehmet Paç 2012. First position at *McKinsey*.

Ramnath Vaidyanathan 2011. Currently Faculty at *McGill University*.

Pnina Feldman 2010. Currently Faculty at the *University of California, Berkeley*.

Sang Hyun-Kim 2008. Currently Faculty at *Yale University*.

Committee Chair. This dissertation won the 2008 *George B. Dantzig Award* (given to the best dissertation in any area of operations research and the management sciences that is innovative and relevant to practice).

Robert Swinney 2008. Currently Faculty at *Stanford University*.

### ***Student Mentoring***

Kinshuk Jerath, 2008. Currently Faculty at *Carnegie Mellon University*.

Necati Tereyağoğlu, 2012 (expected).

Andres Catalán, 2012 (expected).

Jaelynn Oh, 2013 (expected).

Shiliang Cui, 2014 (expected).

### **Research Talks**

#### ***Invited Seminars***

**2011:** University of Texas, Austin, TX; University of Michigan, Ann Arbor; INSEAD, Singapore.

**2010:** University of California, Berkeley, CA; University of North Carolina, Chapel-Hill, NC; Carnegie Mellon University, Pittsburgh, PA; University of Utah, Salt Lake, UT (Winter Operations Conference); University of Chicago, Chicago, IL; Penn State University, State College, PA.

**2009:** University of Southern California, Los Angeles, CA; Cornell University, Ithaca, NY; Northwestern University, Evanston, IL; MIT Boston MA (SIG Service Conference).

**2008:** University of Maryland, College Park, MD; UCLA Anderson, Los Angeles, CA; Wharton Sports Business Forum, Philadelphia, PA.

**2007:** Washington University (Customer Oriented Operations Conference), St. Louis, MO; New York University, New York, NY; University of British Columbia, Vancouver, BC, Canada.

**2006:** Indian School of Business, Hyderabad, India; M&SOM Conference, Georgia Tech, Atlanta, GA.

**2004-05:** Queueing and Games Conference, Washington University, St. Louis, MO; University of Michigan Business School, Ann Arbor, MI; University of California, Irvine, CA; University of Illinois, Urbana-Champaign, IL; Cornell University, Ithaca, NY.

#### ***Other Conference Talks: Invited or Refereed***

##### **INFORMS Annual Meeting, Charlotte NC, November 2011:**

Impact of Purchase Delays on Revenues: A Structural Model based on Arts Organization Data; Learning Quality from Service Outcomes; Pricing and Diagnosis in Credence Services; Pricing and Production Decisions under Conspicuous Consumption; Static Pricing in the Presence of Demand Shocks and Strategic Customers.

##### **INFORMS Annual Meeting, Austin TX, November 2010:**

Quality Speed Conundrum: Tradeoffs in Customer-Intensive Services; Setting Prices for Theater Seats Based on Consumer Choice Behavior; Signaling Quality through Price and Service Rate; Signaling Service Quality in Queues

##### **INFORMS Annual Meeting, San Diego CA, October 2009:**

Pricing and Quantity Decisions under Conspicuous Consumption; Firm Service Rate Selection When Quality and Service Rates are Unknown; Quality Speed Conundrum: Trade-offs in Customer-Intensive Services; Pricing and Quality in Expert Services; Measuring Seat Value in Theaters; Signaling Service Quality in Queues; Herding in Two Queues.

##### **INFORMS Annual Meeting, Washington DC, October 2008:**

Is it Worth the Wait? Herding when waiting is expensive; Linking Customer Satisfaction with Future Willingness-to-pay; Quality vs. Speed: The Waiting/ Service Time Conundrum; Selling to Conspicuous Consumers; Joining Longer Queues: Information Externalities in Queue Choice.

**INFORMS Conference, Seattle WA, October 2007:**

Multi-channel Competition with Opaque Products; Customer Herding in Queuing Services; Customer Herding in Queues: Inferring Service Quality from Queue Lengths; Quantity Decisions Under Customer Learning Behavior.

**INFORMS Annual Meeting, Pittsburgh PA, November 2006:**

Capacity Rationing in Two-Channel Supply Chain with Herding Externalities; Inventory Policies for Capacitated Systems with Multiple Products; Integrating Revenue Management Systems with Recommendation Engines; Quantity Decisions Under Customer Learning Behavior.

**INFORMS Annual Meeting, San Francisco CA, November 2005:**

Rationing and Expediting in a Service Center Facing Multi-class Demand; To Join the Longest Queue or the Shortest Queue: Inferring Quality Through Congestion.

**INFORMS Annual Meeting, Denver CO, October 2004:**

Inferring Service Quality from Queue Lengths in a Multi-server Setting.

## Teaching

OPIM 632. Operations Management: Supply Chain Management. MBA Core Course, Spring Q4 2005–2012.

OPIM 632. Operations Management: Supply Chain Management. WEMBA West. Spring 2011, 2012.

OPIM 220. Introduction to Operations Management. Undergraduate elective, Spring 2006–2012.

## ***Departmental and School Level Service***

Chair, OPIM Department Seminar Committee, 2011-2012.

Member, OPIM Dept. Chairperson Selection Committee (with Noah Gans and Howard Kunreuther), 2008–2009.

MBA Faculty Liaison (Cohort E), 2009–2010, 2010–2011.

Member, OPIM Departmental Seminar Committee, 2005–2007.

Member, OPIM Faculty Recruiting Committee, 2006–2007.

Member, Doctoral Program Admissions Committee, 2007–2010.

## ***Scholarly Service***

Judge, M&SOM Student paper competitions, 2005–2012.

Associate Editor, Management Science (beginning Jan 2011).

Chair, MSOM Service SIG Conference, Ann Arbor, MI, 2011.

Reviewer for *Management Science*, *Operations Research*, *M&SOM*, *Marketing Science*, *Naval Research Logistics*, *Production and Operations Management*, *IIE Transactions*.

Member, INFORMS (Institute For Operations Research and Management Science).

Member, M&SOM (Manufacturing and Service Operations Management) Society.

Chair, Invited Sessions for INFORMS conferences, 2007–2011.

## Miscellaneous

U.S. Permanent Resident (EB-1 Category).

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