

## MALLESH M PAI

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### RESEARCH AND TEACHING FIELDS

Research: Microeconomic Theory: Mechanism Design, Decision Theory; Industrial Organization.  
Teaching: Microeconomics (Undergraduate, MBA, PhD), Competitive Strategy (MBA).

### DOCTORAL STUDIES

Ph.D., Economics, Northwestern University, Evanston, Illinois  
Dissertation: Essays in Multi-Dimensional Mechanism Design  
Committee: Prof Rakesh Vohra (chair), Prof Nabil Al-Najjar, Prof Sandeep Baliga,  
Prof Jeffrey Ely  
Date of Completion: June 2010 (expected)

### PREDOCTORAL STUDIES

B.Tech., Computer Science and Engineering, Indian Institute of Technology, New Delhi, India,  
2004.

### FELLOWSHIPS AND AWARDS

Kellogg School of Management Graduate Fellowship (2004-2009).  
Aditya Birla Scholar (2000-2004).  
National Talent Search Examination Scholar (1998-2004).

### TEACHING EXPERIENCE

Teaching Assistant, Northwestern University, Fall 2006 – Summer 2009

- Executive Masters Program, Kellogg School of Management
  - Managerial Economics, EMP 68-79, Prof Rakesh Vohra & James Schummer.
  - Foundations of Strategy, EMP 79, Prof Thomas Hubbard.
- Department of Economics
  - ECON 480-1: Econometrics, Prof Charles Manski.

### RESEARCH EXPERIENCE

Research Assistant to Professor Rakesh Vohra, 2005-2007.  
Research Assistant to Professor Nabil Al-Najjar, 2006-2007.

## **JOB MARKET PAPER**

### **COMPETING AUCTIONEERS**

We study a model where multiple sellers with limited supply strategically choose both the price formation rule and the allocation rule. We show that inefficiency in this setting arises *both* because sellers choose to withhold the good *and* because they sell to lower valuation buyers despite the presence of higher valuation buyers. This contrasts with the findings of the literatures on monopolistic and competing sellers, which suggest that the only form of inefficiency that arises is from sellers choosing to withhold the good. Further, we show that both types of inefficiencies vanish as the number of sellers in the market grows large. It is an equilibrium for all sellers to offer efficient mechanisms in the limit.

Formally, two sellers, each with unit supply, compete by offering mechanisms to buyers with private valuations. Each buyer participates in the mechanism that offers him the largest interim expected surplus, hence buyer participation at each seller is endogenous. Our main result is a sufficient (and almost necessary) condition for a seller's best response to a quasi-efficient mechanism to be quasi-efficient. Here, quasi-efficient means that conditional on a sale occurring, the good is allotted to the buyer who values the good the most. These conditions are strong; therefore there exist economically interesting settings where sellers offer non-quasi-efficient mechanisms in equilibrium.

### **OTHER PAPERS AND WORK IN PROGRESS**

Optimal Auctions with Financially Constrained Bidders (with Rakesh Vohra). Submitted.

Coarse Decision Making (with Nabil Al-Najjar). Submitted.

Optimal Dynamic Auctions (with Rakesh Vohra). Submitted.

Fair Discounting Auctions (with Kamal Jain and Rakesh Vohra). Patent Pending.

Auctions on a Supply Chain (with J Feldman, V Mirrokni and S Muthukrishnan). In Preparation.

Incentives in Tipped-Service Industries (with B Pablo Montagnes). In Preparation.

Subjective Testing (with Nabil Al-Najjar and Jonathan Weinstein).

Strategy-Proof Random Allotment (with Rahul Deb and Arunava Sen).

### **PATENTS**

Fair Discounting Auction (Applied for, USPTO Application no. #20080313027).

### **PROFESSIONAL EXPERIENCE**

- Intern, Market Algorithms and Optimization Group, Google, Jun 2009 – Sep 2009.
- Intern, Theory Group, Microsoft Research, Jun 2006- Sep 2006.
- Visitor, Planning Unit, Indian Statistical Institute Delhi, May 2004- Aug 2004.

### **PRESENTATIONS**

- Google Research, Sept 2008.
- Society of Economic Design, May 2008.
- Midwest Economic Theory Conference, November 2007.
- INFORMS Annual Meeting, Invited talk, November 2006.
- Microsoft Research, March 2006.

## **REFEREE SERVICES**

Theoretical Economics, Games and Economic Behavior, Journal of Mathematical Economics, International Economics Review.

## **REFERENCES**

Professor Rakesh V Vohra (chair)  
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