

Market Design Job Market Candidate Profiles 2021

Inspired by the SIGecom Exchanges' annual survey of job market candidates,¹ I introduce the first annual collection of profiles of the junior faculty job market candidates of the market design community. The twelve candidates are listed alphabetically. Along with information regarding the candidate's bio, job market paper, other representative papers, and short research summary, each profile also contains links to the candidate's homepage and CV.

–Assaf Romm

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¹Starting with: DUGHMI, S., GKATZELIS, V., AND HARTLINE, J. 2015. SIGecom job market candidate profiles 2016. *ACM SIGecom Exchanges* 14, 1, 2–40.

DELACRETAZ, DAVID ([Homepage](#), [CV](#))

Job market paper: Processing Reserves Simultaneously

Advisors: Simon Loertscher and Paul Klempner

Other fields: Applied microeconomic theory, Matching theory, Mechanism design

PhD: University of Melbourne (2018)

Post-doc: Postdoctoral Prize Research Fellow, Nuffield College and Department of Economics, University of Oxford (2018-present)

Short research summary: I am an applied microeconomic theorist working in the field of market design, with a particular interest for developing new solutions in real-world markets. My job market paper proposes a new and more transparent solution for rationing problems in which part of the capacity is reserved for specific groups of agents. The theory I have developed is directly relevant to a range of practical applications, such as the allocation of seats at public schools and medical resources (e.g., ventilators or vaccines).

Other papers:

[1] Matching Mechanisms for Refugee Resettlement. With Kominers, Scott D. and Teytelboym, Alexander.

[2] When Walras Meets Vickrey. With Loertscher, Simon and Mezzetti, Claudio.

GOLDNER, KIRA ([Homepage](#), [CV](#))

Job market paper: N/A

Advisor: Anna Karlin

Other fields: Algorithms, Social good

PhD: University of Washington, Computer Science and Engineering (2019)

Post-doc: Columbia University (2019–2021)

Short research summary: Within multi-parameter settings, I characterize revenue-optimal mechanisms within an intermediate subclass of natural settings, e.g. where a seller offers items that vary in levels of quality [FGKK16, DGSSW20], and prove that the complexity of the problem lies strictly between the “easy” case of single-parameter and the fully general “multi-dimensional” case of heterogeneous items. I also design simple yet near-optimal mechanisms whose guarantees are robust to various informational and behavioral assumptions, such as risk attitudes [CGMP18], interdependence [EFFG18, EFFGK19], complementarities [CDGM19], and lack of detailed information [GK16]. My most recent work focuses on social good, and examines questions regarding domain-specific problems, e.g. allocation carbon emissions [GIL20] or regulating health insurance markets [EGW20], as well as more abstract objectives, such as gains from trade [BGG20, CGMZ20].

Other papers:

[1] Combinatorial Auctions with Interdependent Valuations: SOS to the Rescue, *EC 2019*. Best Paper with a Student Lead Author at EC 2019. With Eden, Alon, Feldman, Michal, Fiat, Amos, and Karlin, Anna R.

[2] Reducing Inefficiency in Carbon Auctions with Imperfect Competition, *ITCS 2020*. With Immorlica, Nicole and Lucier, Brendan.

GONCZAROWSKI, YANNAI A. ([Homepage](#), [CV](#))

Job market papers: [1] Bounding the Menu-Size of Approximately Optimal Auctions via Optimal-Transport Duality, *STOC 2018*

[2] Matching for the Israeli “Mechinot” Gap-Year Programs: Handling Rich Diversity Requirements. Abstract in *EC 2019*, Best Paper at MATCH-UP 2019, INFORMS AMD Rothkopf Junior Researcher Paper Prize (first place) 2020. With Kovalio, Lior, Nisan, Noam, and Romm, Assaf

Advisors: Sergiu Hart and Noam Nisan

Other fields: Auction and mechanism design, Economics and computation

PhD: The Hebrew University of Jerusalem, Mathematics, Computer Science, and Study of Rationality (2019). Dissertation awarded the Maschler Prize of the Israeli Chapter of the Game Theory Society, and the ACM SIGecom Doctoral Dissertation Award.

Post-doc: Microsoft Research New England (2019–2021)

Short research summary: My main research interests lie in the interface between the theory of computation, economic theory, and game theory. In particular, I am interested in various aspects of complexity in mechanism design (defined broadly from auctions to matching markets), including the interface between mechanism design and machine learning. Such aspects of complexity include the complexity of describing mechanisms (STOC’17, JMP[1] in STOC’18), the communication complexity of mechanisms (e.g., GEB 2019), the complexity of learning mechanisms (e.g., STOC’17, FOCS’18/JACM), and the strategic complexity of mechanisms (e.g., JET 2018, EC’17). I have also applied my research to the design of real-life matching markets (JMP[2]—this market has been run annually since 2018, and in 2020 matched 1,937 high-school seniors, out of 6,118 candidates, to 42 different programs).

Other papers:

[1] The Sample Complexity of Up-to- ε Multi-Dimensional Revenue Maximization, *FOCS 2018*, *Journal of the ACM* (forthcoming). With Weinberg, S. Matthew.

[2] Stable Matching Mechanisms are Not Obviously Strategy-Proof, *Journal of Economic Theory* (2018). With Ashlagi, Itai.

IMAMURA, KENZO ([Homepage](#), [CV](#))

Job market paper: Meritocracy versus Diversity

Advisors: M. Utku Ünver, M. Bumin Yenmez, and Tayfun Sönmez

Other fields: Matching theory

PhD: Boston College, Economics (Expected: 2021)

Short research summary: I am interested in how a market mechanism should resolve the tension among desirable properties. My JMP is about affirmative action in college admissions or hiring. I investigate how to resolve the tension between meritocracy and diversity, and study a reserves-and-quotas rule. The first result is comparative statics for this class of choice rule. The second result is a characterization of the choice rule.

Other papers:

[1] Measure of incentives to manipulate school choice mechanisms, *working paper*. With Kentaro Tomoeda.

[2] A necessary and sufficient condition for weak Maskin monotonicity in an allocation problem with indivisible goods, *Social Choice and Welfare* (2016). With Keisuke Bando.

KOREN, MORAN ([Homepage](#), [CV](#))

Job market paper: Observational Learning and Inefficiencies in Waitlists (with Jamie Kang)

Advisors: Rann Smorodinsky, Itai Arieli and Itai Ashlagi

Other fields: Information economics, Social learning

PhD: Technion, Industrial Engineering and Management (2019)

Post-doc: Stanford, Management Science and Engineering (2019/20), Harvard, CMSA (2020/21)

Short research summary: I am interested in markets where information is dispersed. I study how rational agents behave in such systems, how information is aggregated, and how efficient is the resulting outcome. My goal is to devise solutions to inefficiencies in such markets and examine the robustness of the classic results in the presence of uncertainty, in an attempt to improve existing allocation systems.

Other papers:

[1] The Implications of Pricing on Social Learning, Revise and Resubmit at *TE*. With Smorodinsky, Rann and Arieli, Itai.

[2] Information Aggregation in Large Collective Purchases. With Smorodinsky, Rann and Arieli, Itai.

LARROUCAU, TOMAS ([Homepage](#), [CV](#))

Job market paper: Dynamic College Admissions and the Determinants of Students' College Retention

Advisors: Hanming Fang and Rakesh Vohra

Other fields: Economics of education, Structural labor

PhD: University of Pennsylvania

Short research summary: I broadly study how access to higher education can be more equitable and efficient by improving market design policies in practice. My current research focuses on how dynamic considerations and imperfect information change the performance of traditional centralized assignment mechanisms used in many countries worldwide. In my job market paper, I collect novel data for the Chilean college system and evaluate the effect of incorporating dynamic incentives and eliciting cardinal preferences in the design of the centralized assignment system to improve students' welfare and their college outcomes.

Other papers:

[1] Do “short-list” students report truthfully? Strategic behavior in the Chilean college admissions problem. With Rios, Ignacio.

[2] Improving the Chilean College Admissions System, *Improving the Chilean College Admissions System, Operations Research* (forthcoming). First place, Doing Good with Good OR - Student Paper Competition (2018). With Cominetti, R., Rios, I., and Parra, G.

QIAN, PENGYU ([Homepage](#), [CV](#))

Job market paper: Blind Dynamic Resource Allocation in Closed Networks via Mirror Backpressure

Advisor: Yash Kanoria

Other fields: Online decision making, Stochastic networks, Platforms

PhD: Columbia University, Graduate School of Business

Short research summary: My research focuses on the foundational challenges in networked marketplaces with an emphasis on online decision making, using tools from applied probability and modern optimization, with applications in revenue management, pricing, and matching markets. I develop algorithms/mechanisms that not only are provably near-optimal, but also are simple, robust, hence practical for real-world systems.

Other papers:

[1] Price Discovery and Efficiency in Waiting Lists: A Connection to Stochastic Gradient Descent, *EC 2020*. With Ashlagi, Itai, Leshno, Jacob, and Saberi, Amin.

[2] Which Random Matching Markets Exhibit a Stark Effect of Competition?, *SODA 2021*. With Kanoria, Yash, and Min, Seungki.

RAGHAVAN, MADHAV ([Homepage](#), [CV](#))

Job market paper: Transparency in Centralised Allocation: Theory and Experiment

Advisors: Arunava Sen (PhD) and Bettina Klaus (postdoc)

Other fields: Game theory, Axiomatic resource allocation

PhD: Indian Statistical Institute, New Delhi (2015)

Post-doc: University of Lausanne, Switzerland (2017-present)

Short research summary: I am interested in theories and experiments on market design. My JMP proposes solutions to the non-transparency problem facing many popular mechanisms, where participants cannot verify the correctness of their assignments, and the designer in turn has the ability to manipulate the allocation without detection. We show that transparency can be achieved in many settings remarkably simply, by the use of communicated ‘terminal-cutoffs’ and ‘predictable’ multi-stage mechanisms. We test the effectiveness of these solutions in a school admissions laboratory experiment.

Other papers:

[1] Influence in Private-Good Economics, *J. Math. Econ.* (2020).

[2] Swap-Flexibility in the Assignment of Houses, *J. Math. Econ.* (2020).

SAYEDAHMED, DILEK ([Homepage](#), [CV](#))

Job market paper: Centralized Refugee Matching Mechanisms with Hierarchical Priority Classes

Advisor: Szilvia Papái

Other fields: Gender- and minority-sensitive algorithm design, Refugee settlement, Immigration

PhD: Concordia University Economics Department

Short research summary: I am interested in the intersection of the research areas of matching theory, algorithm design, and refugee settlement. My JMP is about designing a centralized matching algorithm to match refugee families to host countries. I design two new algorithms that take into account refugee preferences, as well as, country preferences. However, I also propose a UNHCR-mandated hierarchical priority class structure to be enforced on countries within which I keep country preference rankings intact. I am interested in the types of stability and fairness conditions that can be achieved in this environment. Therefore, I weaken stability and fairness axioms and establish the weak stability and fairness axioms that my new two algorithms achieve. My study has policy implications for immigration, centralized college admissions, and the design of public school choice systems.

Other paper:

[1] Targeted Priority Reserve Policies. With Szilvia Papái.

SULLIVAN, COLIN ([Homepage](#), [CV](#))

Job market paper: Eliciting Preferences over Life and Death: Experimental Evidence from Organ Transplantation

Advisors: Alvin Roth, Judd Kessler, Clayton Featherstone, and Corinne Low

Other fields: Experimental economics, Labor economics

PhD: The Wharton School at the University of Pennsylvania, Business Economics and Public Policy (2019)

Post-doc: Stanford University Department of Economics (2019-2021)

Short research summary: I am a microeconomist using experiments to study labor markets, organ markets, and other matching markets. In my job market paper, I elicit preferences over distributions of survival times in incentivized, life-or-death decisions, by asking subjects to allocate an organ transplant among real cats with kidney failure. I find hypothetical decisions may not be reliable in this context: a large share of subjects allocate a hypothetical transplant differently than a real transplant, though estimates of aggregate preferences are the same across incentivized and unincentivized conditions. I show that aversion to wealth inequality is a good predictor of aversion to survival inequality, and that most subjects respond to increases in expected survival time even if the gains accrue to the longer-lived patient.

Other paper:

[1] Incentivized Resume Rating: Eliciting Employer Preferences without Deception, *American Economic Review* (2019). With Kessler, Judd and Low, Corinne.

THAKUR, ASHUTOSH ([Homepage](#), [CV](#))

Job market paper: Matching in the Civil Service: A Market Design Approach to Public Administration and Development

Advisors: Alvin Roth and Steven Callander

Other fields: Political economy, Development

PhD: Stanford GSB (Expected: December 2020)

Short research summary: My research uses tools from market design to study institutional design in development, political economy, labor, and finance. My JMP is about the design and the impact of Indian Civil Service state assignment mechanisms used to allocate elite civil servants to different parts of the country. I show that the recent allocation procedures systematically assign relatively poor quality bureaucrats to distressed states: regions with external foreign conflict, states with internal political strife, and newly-formed states. If such imbalances are not addressed, vicious cycles can emerge: relatively higher quality civil servants avoid disadvantaged states, outcomes in these distressed areas further deteriorate, and the preference to avoid these regions is further reinforced. This motivates a new class of theoretical constraints in matching theory: global balance of bureaucratic quality across different regions of the country. I develop new mechanisms to help overcome these imbalances and use my empirical results to make welfare counterfactuals for these different policies.

Other papers:

[1] Matching Politicians to Committees.

[2] Combining Social Choice and Matching Theory to Understand Institutional Stability.

VOHRA, AKHIL ([Homepage](#), [CV](#))

Job market paper: Unraveling and Inefficient Matching

Advisors: Matthew Jackson and Alvin Roth

Other fields: Networks, Political economy

PhD: Stanford University, Department of Economics (Expected: June 2021)

Short research summary: My JMP identifies a new channel by which unraveling can occur even in markets with an abundance of talent. Unraveling can be caused by the presence of a secondary market, whereby firms may poach workers employed by other firms. Moderately transparent secondary markets can promote unraveling, as early matching prevents rivals from learning about the quality of the hired worker. When secondary markets are highly transparent, unraveling dissipates, but because lower-ranked firms want to ensure they do not hire the top-tier workers. Importantly, the standard cure, coordination of hiring times in the primary market, may reduce match quality compared to the unraveled setting.

Other papers:

[1] Strategic Influencers and the Shaping of Beliefs.

[2] Losing Money to Make Money: The Benefits of Salary Compression.