

## Saurabh Khanna

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CONTACT INFORMATION	CERAS 215 Center for Education Research at Stanford 520 Galvez Mall Stanford, CA 94305 USA	Voice: +1 (510) 603-0388 E-mail: saurabhkhanna@stanford.edu Homepage: saurabh-khanna.github.io Orcid: orcid.org/0000-0002-9346-4896
RESEARCH INTERESTS	Combining insights from network analysis, machine learning, and game theory to understand aspects reshaping education in developing nations	
EDUCATION	<b>Stanford University</b> , California, USA <i>Ph.D., Educational Policy (Ph.D. Minor in Computer Science)</i> , June 2023 <ul style="list-style-type: none"><li>Advisors: Prof. Prashant Loyalka, Prof. Ben Domingue</li></ul> <i>M.A., Economics</i> , June 2021  <b>Tata Institute of Social Sciences</b> , Mumbai, India <i>M.A., Elementary Education</i> , May, 2017  <b>Birla Institute of Technology and Science</b> , Pilani, India <i>B.S., Computer Science</i> , May, 2012	
HONORS AND AWARDS	William R. and Sara Hart Kimball Stanford Graduate Fellowship Award (Annual Award of \$46,000 for 3 years), 2018-21 Immigration Policy Lab Collaborative Research Fellow (Summer Research Award of \$4,500), 2019 Institute Silver Medal Award, Master of Arts in Elementary Education, Tata Institute of Social Sciences, 2017 National Talent Search Examination Scholar, Government of India [Top 0.2% of 500000], 2006-12 Winner, Project on 3-Dimensional Imaging at APOGEE technical festival, BITS Pilani, 2010 All India Rank 562, All India Engineering Entrance Examination [Top 0.05% of 1000000], 2008 All India Rank 14 and 34, National Science Olympiad, 2007-2008	
RESEARCH EXPERIENCE	<b>Stanford University</b> , California, USA <i>Research Assistant, Graduate School of Education</i> September 2018 - present <i>Research Consultant, Freeman Spogli Institute</i> May 2017 - July 2018 <i>PI: Prof. Prashant Loyalka</i> <ul style="list-style-type: none"><li>Led protocol design and coordination for the SuperTEST Project - A large-scale international study to understand and improve the quality of technical education received by youth in developing economies</li><li>Cleaned and analyzed data for 70000 students, 5000 faculty, and 400 department heads from technical education institutes in China, Russia, India, and South Korea</li></ul> <b>Immigration Policy Lab</b> , Stanford University, California, USA <i>Graduate Research Fellow</i> June 2019 - present <i>PI: Prof. David D. Laitin</i> <ul style="list-style-type: none"><li>Designed Interactive Voice Response Survey assessing integration in host nations for immigrants</li></ul>	

- Configured short message servers and data storage servers to disseminate survey invites and record survey responses respectively

**The World Bank**, New Delhi, India

*Research Consultant*

**June 2018 - August 2018**

*PI: Dr. Tara Beteille*

- Coordinated data analysis, data cleaning, and data management for 118 government engineering institutes under the purview of Technical Education Quality Improvement Programme (TEQIP)
- Employed social network analyses to assess homophily and integration among students on account of affirmative action policies
- Automated Python emailing scripts and conducted psychometric analysis towards sharing scaled performance reports with institutes

**Center for Education, Innovation and Action Research**, Mumbai, India

A collaborative initiative between *Tata Institute of Social Sciences (TISS)* and *Massachusetts Institute of Technology (MIT)*

*Research Assistant, Connected Learning Initiative (CLIX)*

**June 2015 - April 2017**

*PI: Prof. Padma Sarangapani (TISS) and Prof. Vijay Kumar (MIT)*

- Designed mathematics curriculum to improve the professional and academic prospects of 165 thousand high school students from underserved communities
- Refined digital and hands-on activities to match the cultural and social capital of students across 4 Indian states – Telangana, Chhattisgarh, Mizoram, and Rajasthan
- Led development of a game ‘Police Quad’ to develop geometric reasoning proficiency in learners
- Conducted qualitative and quantitative analysis of student data to measure the impact of peer learning pedagogy by linking specific practices adopted in classrooms to student outcomes

TEACHING  
EXPERIENCE

**Teach For India**, New Delhi, India

*Fellow/Multi-subject Elementary Teacher*

**May 2013 - May 2015**

- Taught and worked to bridge the achievement gap of 34 students (Grades 4 and 5) in a low-fee private school in Seelampur, East Delhi
- Achieved average grade level growth of 3.9 years with 75% of students reaching their grade levels
- Raised funds amounting to INR 1.2 lakhs leading to improvement in school infrastructure and creation of a library, to encourage reading and thereby improve reading levels
- *Co-Founder and Curriculum Developer*, ‘*Khel Khel Mein*’, an initiative providing underprivileged children with guidance and opportunities to participate in an organized sport

INDUSTRY  
EXPERIENCE

**Juniper Networks**, Bengaluru, India

*Software Engineer*

**June 2012 - May 2013**

- Reduced IPS network parsing time by 97% by implementing prediction algorithms
- Led development on provisioning part of the security code base
- Redesigned user interfaces in XML and JavaScript and implemented their backend functionality through Java

PUBLICATIONS

Loyalka, P., Liu, O. L., Li, G., Chirikov, I., Kardanov, E., Gu, L., Ling, G., Yu, N., Guo, F., Ma, L., Hu, S., Johnson, A. S., Bhuradia, A., **Khanna, S.**, Froumin, I., Shi, J., Choudhury, P. K., Beteille, T., Marmolejo, F., Tognatta, N. (2019). Computer science skills across China, India, Russia, and the United States. *Proceedings of the National Academy of Sciences*, 201814646 <https://doi.org/10.1073/pnas.1814646116>

	<p><b>Khanna, S.</b> (2017). Through the Sociological Lens: Learning Mathematics in a Mumbai Classroom. <i>For the Learning of Mathematics</i> 37(3), 24-26. ISSN 0228-0671</p>
CONFERENCE PRESENTATIONS	<p><b>Khanna, S.</b>, Loyalka, P. (2020). Affirmative Action and Social Integration in College. <i>SREE Spring 2020 Conference, Practical Significance and Meaningful Effects: Learning and Communicating What Matters, Arlington</i></p> <p><b>Khanna, S.</b>, Gajinkar, A., Roy, A., Chatterji, A., Bapat, A., Bose, A. (2017). Rigor as Familiarity in Mathematics Assessments. <i>41st Annual Meeting of the International Group for the Psychology of Mathematics Education, Singapore</i></p> <p>Bapat, A., <b>Khanna, S.</b>, Srinivas, S., Thirumalai, B., Kumar, R., Rahaman, J., Chougale, S., Bose, A. (2017). Facilitating Geometry Learning through Blended Curriculum. <i>41st Annual Meeting of the International Group for the Psychology of Mathematics Education, Singapore</i></p> <p>Srinivas, S., <b>Khanna, S.</b>, Rahaman, J., Kumar, V. (2016). Designing a Game-Based Learning Environment to Foster Geometric Thinking. <i>2016 IEEE Eighth International Conference on Technology for Education (T4E)</i> (pp. 72-79). IEEE.</p> <p><b>Khanna, S.</b> (2016). Cost-effective pedagogies for implementing efficient inclusive schooling. <i>6th International Conference on Science of Human Learning, Delhi</i></p> <p><b>Khanna, S.</b> (2016). Designing evidence based games to assess mathematical thinking. <i>TSG 42 of the 13th International Congress on Mathematics Education, Hamburg</i></p>
INVITED TALKS	<p>January 20, 2017. <i>Reservation under the Right to Education Act</i>. Quality Education Support Trust (QUEST)</p> <p>December 30, 2015. <i>Identity and the Textbook</i>. Center for Education, Innovation and Action Research Seminar Series</p>
RELEVANT INTERNSHIPS	<p><b>National Center for Antarctic and Ocean Research</b> (Ministry of Earth Sciences), Goa, India  <i>Research Analyst, Polar Remote Sensing Lab</i> <span style="float: right;"><b>May 2010 - July 2010</b></span></p> <p><b>SAP SuccessFactors</b>, Bengaluru, India  <i>Software Developer, Data Analytics</i> <span style="float: right;"><b>July 2011 - December 2011</b></span></p>
TECHNICAL SKILLS	<ul style="list-style-type: none"> <li>• Statistical Packages: R (Tidyverse), Stata, Python (Scikit-learn, StatsModels), SPSS</li> <li>• Languages: R, Python, SQL, MATLAB/Octave, Java, C, JavaScript, C#.NET, Unix shell</li> <li>• Applications: Visual Studio, Microsoft SQL Server, Spyder, Jupyter, Gephi, L<sup>A</sup>T<sub>E</sub>X, Adobe Photoshop</li> </ul>
LANGUAGES	<ul style="list-style-type: none"> <li>• Fluent: English, Hindi, Punjabi</li> <li>• Conversational: Spanish</li> </ul>