

Xiao-Yue Gong

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EDUCATION

GRE: 337/340; GRE Mathematics Subject: 900.

Massachusetts Institute of Technology Operations Research (Ph.D)	2017.8-present Boston GPA: 5.0/5.0
New York University Shanghai Honors Mathematics (B.S.), Interactive Media Arts (B.S.)	2013.6-2017.5 Shanghai summa cum laude
New York University	2015.8-2017.1 New York
New York University Tel Aviv	2014.7-2014.7 Istanbul
Budapest Semesters in Mathematics	2015.6-2015.8 Budapest
Tel Aviv University Business Entrepreneurship Program	2014.6-2014.7 Tel Aviv
No.2 High School of East China Normal University	2010.8-2013.6 Shanghai
Lake Forest High School High School Exchange Program	2011.9-2011.10 Illinois

MERIT AWARDS & SCHOLARSHIPS

• LIDS Student Conference 2019 Best Presentation Award	LIDS
• Tech for Truth Hackathon Supply Chain Grand Prize	Lockheed Martin
• MIT Bitcoin Hackathon 2018 ARCC Prize	Asia Reserve Currency Coin
• MIT IDEAS Global Challenge 2018 winner	MIT
• 1 of 14 shortlisted finalists for Rhodes Scholarships (China)	The Rhodes Trust
• Provost's Award 2017	NYU Shanghai
• Phi Beta Kappa	PBK Society NYU Chapter
• Major Honors in Honors Mathematics	NYU Shanghai/NYU
• 2016 United Nations Youth Assembly Resolution Fellowship	The Resolution Project
• President's Service Award 2016	New York University
• Summer Undergrad Research Experience	NYU Courant Institute
• NYU Shanghai Dean's Undergraduate Research Fund 2016	NYU Shanghai
• Venturewell 2016 Entrepreneurs-Team	Venturewell
• NYU Reynolds Changemaker Challenge Champion 2015	NYU Reynolds Program
• 2015 Autodesk IMA Smart Home Design Challenge Winner	Autodesk
• CPB Scholarship 2014	Israeli Government
• Dean's List + Recognition Award 2013-2016	NYU Shanghai
• Resident Assistant Scholarship 2014-2015	NYU Shanghai
• Intel 26th Shanghai Adolescents Science&Tech Innovation Fair 1st Prize	Intel

MATHEMATICAL STUDIES

Research Assistant, Operations Research Center	2017.8-present
• Coauthored paper "A Fast Max Flow Algorithm" with Professor Jim Orlin. Submitted.	
• Received A+ in PhD level courses: 6.854 Advanced Algorithms; 6.860 Statistical Learning Theory and Application; 15.081 Introduction to Mathematical Programming.	
Quantitative Researcher Intern, D.E. Shaw	2019.5-2019.8

- Conducted quantitative research at the D.E. Shaw Group.
- Instructor, Massachusetts Institute of Technology** 2019.1-2019.1
- Co-instructed PhD/master level course 15.S60 Computing in Optimization & Statistics.
 - Co-instructed undergrad course 15.S41 Software Tools for Business Analytics.
- Research Assistant, NYU Shanghai Computer Science Lab** 2017.6-2017.8+
- Coauthored paper “Efficient Entropy for Policy Gradient with Multi-Dimensional Action Space” was accepted at ICLR 2018 Conference’s workshop.
- Student, Courant Institute of Mathematical Sciences** 2015.9-2017.1
- Graduate/PhD level classes: Real Variables, Random Graphs, Stochastic Calculus, Harmonic Analysis, Differential Geometry I, Topology I, Functional Analysis, Advanced Topics in Probability: Entropy and Ergodic Theory.
- Student, Budapest Semesters in Mathematics** 2015.6-2015.8
- Advanced Combinatorics, Conjecture and Proof, Real Functions and Measures.
- President, New York University Mathematics Society** New York, 2016.5-2017.1
- Arranged weekly math talks and maintained a speaker and member database.
 - Made yearlong plan and raised the club budget received by 17%.
 - Allocated tasks and managed the executive board.
 - Organized participation in mathematical conferences and competitions.
 - Facilitated communications among the math community of undergrads, grads and faculty at NYU.
- Undergraduate Researcher, Courant Institute of Mathematical Sciences** New York, 2016.3-present
- Drafted a research proposal under the supervision of Professor Efe Ok.
 - Studied the theory of the Möbius functions and applied this theory to finding characterisation of the Myerson value and the Shapley value in cooperative games in game theory.
 - Summarised the results in the format of a complete research paper and presented at Summer Undergraduate Research Experience Symposium at Courant Institute of Mathematical Sciences.
- Teaching Assistant/Tutor/Grader, Courant Institute of Mathematical Sciences** 2015.10-2017.1
- Worked as a teaching assistant/tutor/grader for Calculus I, Linear Algebra, and Introduction to Web Development & Programming.

ENVIRONMENTAL DESIGN & ENGINEERING

- Founder & CEO, Aeolian Inc.** Shanghai + New York, 2015.9-present
- Envisioned and founded Aeolian as a social venture that combats the severe health effects of indoor air pollution in China by providing a network of air quality monitoring.
 - Recruited team members and assigned responsibilities.
 - Worked with public relation professionals and legal consultants.
 - Conducted industry research and customer survey with team members.
- Researcher, Project: Air Butler-Indoor Air Purifying System** Shanghai, 2015.1-2015.6
- Conducted prior art search for similar products and produced a prototype of the design.
 - Entered Autodesk IMA Smart Home Design Challenge 2015 and was one of the two winners.
- Student Researcher, Project: Application of Dye-Sensitized Solar Cells** Shanghai, 2010.10-2011.4
- Prepared and produced dye-sensitised solar cells for use on sunglasses at the Advanced Materials Department of Fudan University.

- Documented the lab results in the form of a scientific paper and received Shanghai Pudong Tomorrow's Science & Technology Star Best Speech Award.
- Obtained a design patent in China for this invention.

Student Researcher, Project: Segmented Usage of Alkaline Cells Shanghai, 2011.10-2012.4

- Surveyed neighborhood committees in Zhabei District on disposal of used alkaline cells.
- Received Environmental Science First Prize and scholarships at Intel 26th Shanghai Adolescents Science & Technology Innovation Fair.

ENTREPRENEURSHIP

Team Leader, MIT IDEAS Global Challenge Cambridge, 2017.9-2018.5

- Team management, product development, pitching.
- Received \$7,500 grant as one of the MIT IDEAS Global Challenge winners.

Team Leader, NYU Reynolds Changemaker Challenge New York, 2015.9-2016.1

- Conducted customer survey and industry research with the team.
- Drafting the business plan and financial documents with the team.
- Won the top award NYU Reynolds Best Overall Venture with \$10,000 grant.

Team Leader, Venturewell E-Team Program New York, 2016.1-2017.5

- Prepared the business proposal and successfully entered Stage-1 E-Teams with \$5,000 grant.
- Identified and solicited recommendation letters from mentors and potential investors.
- Currently working with mentors to develop the venture further to continue onto Stage 2.

Student, Tel Aviv University Tel Aviv, 2014.6-2014.7

- Attended the Business Entrepreneurship Summer Program on full scholarships.

Co-Organizer, HackShanghai Shanghai, 2014.5-2015.11

- Inaugurated the largest international college hackathon in China, HackShanghai with friends.
- Advocated hackathon culture in China.
- Provided hardware, legal, operational and marketing support.
- Identified and negotiated with sponsors, and maintained a database of sponsors.

CRISIS RESPONSE & CONFLICT RESOLUTION

Resident Assistant Shanghai, 2014.8-2015.5

- Acted as a first-responder to emergencies and crises that occur in a residence hall with 600+ students.
- Enforced university residence hall policies, and resolved conflicts among residents.
- Conducted 1-on-1 meetings with 30+ residents each semester.
- Provided medical chaperone and guarantee of payment/insurance support.
- Organized university-wide networking/musical events that engaged students, faculty and staff.
- Cultivated a caring special interest community for the purpose of fostering personal growth of residents.

Cultural Ambassador Shanghai, 2014.1

- Facilitated NYU Abu Dhabi students' transition to the Shanghai campus.

PUBLIC OUTREACH & ENGAGEMENT

Presenter, MIT Women's Initiative Cambridge+Texas, 2017.11-2018.1

- Presented at multiple middle/high schools in Texas to encourage young girls to explore further studies and careers in the STEM fields.

Dance Workshop Facilitator and Volunteer, The Renewal Center Shanghai, 2013.10-2014.7

- Set up dance/physical education workshops at the Renewal Center, a place that provides shower, clean clothing, education and sometimes housing for the displaced.
- Registered visitors for showers and handed out clean clothes of appropriate sizes and toothbrushes.
- Organised donations of cash and of men's clothes to the Renewal Center from NYU Shanghai at the end of the 2014 spring semester.

XLSforKids Volunteer Dance Workshop Facilitator, OKiki Kindergarten Shanghai, 2015.1-2015.5

- Set up volunteer dance workshops at Okiki Kindergarten instructed by club members.
- Led the dance workshops with other members of NYU Shanghai XLS Dance Club to engage children in dancing, which became a traditional cooperation at Okiki Kindergarten and XLS Dance Club.

Workshop Instructor, MakeForKids Shanghai, 2014.1-2015.8

- Instructed Makeforkids workshops in Shanghai to help young children learn to build electronic projects.

Other WORK EXPERIENCE

Legal Summer Intern, Citibank China Shanghai, 2014.7-2014.9

- Understood corporate authorization & prepared guidance notes on powers of attorney.
- Conducted legal research on topics including Anti-Bribery Cases, Bank regulation, Free Trade Zone.
- Prepared Transaction Summaries, Litigation Case Updates.
- Conducted ad-hoc analysis and translation of legal terms.

Lab Student Worker, NYU Shanghai Interactive Media Arts Lab Shanghai, 2014.3-2015.1

- Assisted the daily management of IMA Lab.
- Provided tutoring for student hardware and software projects.

PUBLICATIONS & CONFERENCES

Xiao-Yue Gong, Jim Orlin, "A Fast Max Flow Algorithm" *2019 LIDS Student Conference* Cambridge, Massachusetts, 2019.

Jim Orlin, **Xiao-Yue Gong**, "A Fast Max Flow Algorithm" *INFORMS* Phoenix, Arizona, 2018.

Yiming Zhang, Quan Vuong, Kenny Song, **Xiao-Yue Gong**, Keith Ross, "Efficient Entropy for Policy Gradient with Multi-Dimensional Action Space" *Sixth International Conference on Learning Representations (Workshop Track)* Vancouver, Canada, 2018.

Xiaoyue Gong, "A Unified Approach to characterization of the Myerson Value and the Shapley Value Through Application of the Möbius Functions" *Courant Summer Undergraduate Research Experience Symposium*. New York, United States. October, 2016.

Xiao-Yue Gong, "Contemplation in Boisterousness" (in Chinese). *Science&Vie*. Shanghai: Shanghai Art and Literature Publishing House. January, 2011. Print.

Projects and Prizes

"The Price of Human Nature"—a review project that synthesizes a variety of models and highlights selected results for the Selfish-Routing Problem, coauthored with Lilian Tsai and vibhaalakshmi sivaraman. Selected as an example report for MIT graduate course 6.854 Advanced Algorithms, January, 2019.

"Collective Medical Supply Chain Monitor for Vaccine Confidence"—a hackathon project at Tech for Truth hackathon organized by Lockheed Martin and MIT Innovation Initiative, with Rachel Smith, Adolphus Lau, and Yujie Wang. Grand Prize Winner for Supply Chain Track, Presented at SXSW Lockheed Martin Booth, March, 2019.

"Juretheum"—an affordable distributed justice system built on Ethereum smart contracts technology. Prize: Asia Reserve Currency Coin \$3000 MIT Bitcoin Hackathon, March, 2018.

"Transparency Dashboard"—an online analytics tool for machine learning decisions. Prize: 3rd Place \$500 Hack for Inclusion (Bias in Machine Learning Track), March, 2018.

Federal and state level data-driven policy recommendation paper for Internet and Cybersecurity Challenge. Prize: finalist \$500 MIT Policy Hackathon, April, 2018.

ATHLETICS & ARTS

Soccer: Midfielder in NYU Shanghai Women Soccer Team

Dance: Co-founder&Vice President of NYU Shanghai Xiao Long Shaker Dance Club; Beijing dance Academy Chinese Dance Level Eleven;

OTHER LANGUAGES

Mandarin: native; **Wu(Shanghainese):** native.