

# Xiao-Yue Gong

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## EDUCATION

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

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

## MERIT AWARDS & SCHOLARSHIPS

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• 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

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<b>Research Assistant, Operations Research Center</b>	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.	
<b>Quantitative Researcher Intern, D.E. Shaw</b>	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**

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**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

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**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

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**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

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**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

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**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

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**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

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**"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.

**"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

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**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

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