

# Ian Leifer

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[https://scholar.google.com/citations?user=K61EQ\\_sAAAAJ](https://scholar.google.com/citations?user=K61EQ_sAAAAJ)

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- Creative problem solver experienced in working on cutting edge research problems.
- Researcher with full-stack data science experience and passion for understanding very complex data.
- Team player with strong communication skills and leadership experience.

## EDUCATION

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Fall 2016 – present	Ph.D. <b>The Graduate Center, CUNY</b> . New York, NY. <i>Physics (Complex networks)</i> . "Symmetry-inspired analysis of biological networks". <i>Advisor: Hernan Makse</i>
Fall 2014 – Spring 2016	M.Sc. <b>VSHOPF, UNN</b> . Nizhny Novgorod, Russia. <b>Solid State Physics</b> .
Fall 2010 – Spring 2014	B.Sc. <b>VSHOPF, UNN</b> . Nizhny Novgorod, Russia. <b>Physics</b> .

## PROFESSIONAL EXPERIENCE

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Sep 2017 – present	<b>Teaching Assistant</b> . Physics department. City College of New York.
Aug 2013 – Apr 2015	<b>Software Engineer C/C++</b> . MERA. Nizhny Novgorod, Russia. Developing the driver for Radio Base Stations.
Summer 2013	<b>Software Engineering Intern C/C++</b> . MERA. Nizhny Novgorod, Russia.

## QUALIFICATIONS SUMMARY

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### Analytical skills and creative problem solving

- Studied literature in the fields of biology, graph theory, computer science, dynamical systems, group theory, control systems, computer electronics, business evaluation and more developing models and producing research resulting in publications in peer-reviewed journals.
- While working on a highly cross-disciplinary research problem, created a collaboration between 10+ people in 5 research groups with the wide range of knowledge resulting in multiple publications to come up in 2021.
- During code review uncovered a major issue in the testing process and implemented a project to fix it.
- Developed a semi-automated grading software making the process more objective at at least twice the speed.

### Data analysis

#### *Data analysis and optimization models*

- Collaborated in developing the optimization model aimed at repairing graphs with missing edges resulting in multiple scientific publications to come up in 2021.
- Formulated and applied a statistical hypothesis testing framework to look for cross-correlations in the data based on 4000 signals measured 1500 times resulting in peer-reviewed publication.
- Developed a R package with C insertions implementing a mathematically formulated algorithm.
- Developed a parallel code to analyze data on 100000+ networks using the R package above.

#### *Data visualization*

- Developed a framework to visualize outputs based on the analysis of over 450 networks of under 30000 nodes resulting in the peer-reviewed scientific publication.
- Developed a framework to visualize the cross-correlation data on 4000 signals.
- Currently developing a framework to visualize abstract mathematical concept of automorphism group to interpret outputs of the optimization model.

### *Data scraping, wrangling and cleansing*

- Scraped over 450 networks across 37 databases and wrangled them to the same format.
- Using the API scraped 170000 data files and compiled them into a few interpretable datasets.
- Scraped 5+ school websites, Google Scholar and ratemyprofessors.com using Selenium and BeautifulSoup to compile the dataset summarising the data on the potential research advisors.

### **Leadership and teamwork**

- Led a team of 3 people for 3 months successfully implementing the project vastly improving the testing process.
- Co-leading the scientific collaboration with 10+ people on multiple research projects.
- As a senior PhD student guided junior PhD, masters and undergraduate students in their research projects.

### **Verbal and written communication skills**

- Author of 4 peer-reviewed publications. 2 papers under review and 3 to come up in 2021.
- Spoke at multiple conferences in the fields of Physics, Biology, Pharmacology and Finance.
- Wrote rebuttal letters to address reviewers' criticism and communicated with editors during the review process of multiple publications.
- Explaining mathematical concepts in a simple language to publish in a peer-reviewed biological journal.

### **SKILLS**

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<i>Programming languages</i>	<b>R</b> (Advanced), <b>C/C++</b> (Advanced), <b>Bash</b> (Intermediate) Matlab (Intermediate), Perl (Intermediate)
<i>Human languages</i>	Russian (native), English (proficient)
<i>Software development</i>	<b>Linux</b> , <b>tidyverse</b> , <b>Rcpp</b> , <b>igraph</b> , <b>Git</b> , <b>Agile Methodologies</b> TCP/IP stack, Selenium, Inkscape, Keras, BeautifulSoup

### **OTHER ACTIVITIES**

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- Played Ultimate Frisbee on a D1 college team and in a D2 club (2010-2013, 2015-2016). Won gold, silver and bronze medals in multiple D1 and D2 tournaments.
- Was a counselor at a summer camp (Linguist-Solnechnyi) designed to teach kids 7-17 years old foreign languages (Summer 2011, Summer 2012).