

# Ian Leifer

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## SKILLS

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<i>Programming</i>	C/C++ (Advanced), R (Advanced), Python (Beginner) Matlab(Intermediate), Perl (Intermediate), Bash (Intermediate)
<i>Software</i>	Linux (Advanced), Inkscape (Intermediate), L <sup>A</sup> T <sub>E</sub> X(Beginner)
<i>Languages</i>	Russian (native), English (proficient)

## EDUCATION

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**PhD Physics (Complex networks)** Fall 2016-present

*The Graduate Center, City University of New York (New York, NY)*

Scientific Advisor: Dr. Hernan Makse

- Data science and machine learning applied to social and biological networks
- Management experience: supervising PhD and Undergraduate students

**MSc Solid State Physics** Fall 2014-Spring 2016

*VSHOPF UNN (Nizhny Novgorod, Russia)*

Thesis: Synaptic activity propagation simulation in neural networks with realistic morphologies

Advised by Dr. Victor Kazantsev

- Developed software package for neural network growth process modeling and activity propagation simulation
- Executed statistical analysis of obtained data

**BSc Physics** Fall 2010-Spring 2014

*VSHOPF UNN (Nizhny Novgorod, Russia)*

Thesis: Functional relationship detection in neural networks of the brain

Advised by Dr. Victor Kazantsev

- Developed software package for handling of the data obtained from experiments run in the lab

## WORK EXPERIENCE

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**Teaching Assistant** Sep 2017-present

*City College of New York*

Taught physics labs for undergraduate students

- Was an instructor in a pilot innovative physics teaching program using education research-based materials

**Software Engineer C/C++** Aug 2013-Apr 2015

*MERA. Software Services Company*

Worked on low-level project for driver on Base Station boards

- Redeveloped component testing in the project, unified it for many subsystems and adopted several new testing tools
- Management experience: Leading a team of three people. Directed a 3 month long project, vastly improving testing process. Was initiator of the idea for this project, that later was approved by supervisors

**Software Engineering Intern C/C++** Summer 2013

*MERA. Software Services Company*

- Obtained basic knowledge in Linux, C, C++, internet networks

## PUBLICATIONS

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- **Ian Leifer**, Luis Alvarez, Wolfram Liebermeister, Hernán A. Makse. Identifying the minimal transcriptional regulatory network in bacteria. (In preparation 2020).
- **Ian Leifer**, Mishael Sánchez, Wolfram Liebermeister, Cecilia Ishida, Hernán A. Makse. Fibration symmetries in genetic networks predict synchronized gene expression in bacteria. (In preparation 2020).
- **Ian Leifer**, Hernán A. Makse. Discovering synchrony in information-processing networks using graph fibrations. (Under review Physical Review E).
- **Ian Leifer**, Flaviano Morone, Saulo D. S. Reis, José S. Andrade, Mariano Sigman, Hernán A. Makse. Circuits with broken fibration symmetries perform core logic computations in biological networks. PLoS Comput Biol 16(6): e1007776. (2020).
- Flaviano Morone, **Ian Leifer**, Hernán A. Makse. Fibration symmetries uncover the building blocks of biological networks. *Proc. Nat. Acad. Sci. USA*. 117 (15) 8306-8314, April 14, 2020
- **Ian Leifer**, Lev Leifer. Small business valuation with use of cash flow stochastic modeling. Proceedings of SMRLO'16, IEEE, 2016. pp. 511 - 516