Zeqian Li
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Education

- **Unversity of Illinois at Urbana-Champaign** — United States
  Ph.D in Physics candidate — *Aug 2018 – current*
- **Hong Kong Baptist University** — Hong Kong
  B.S in Physics, minor in Applied Mathematics; GPA: 3.84/4.00 — *Sep 2014 – July 2018*

Honors and Rewards

- **Center for Physics of Living Cells (CPLC) Fellow** — UIUC, 2018-2020
- **HKSAR Government Scholarship** — Hong Kong, 2015-2018
- **Scholastic Award** — Hong Kong Baptist University, 2018

Research Experience

- **University of Illinois at Urbana-Champaign** — United States
  Supervisor: Seppe Kuehn — *Aug 2019 - current*
  - **Yellowstone hot spring microbial communities**
    I am building a fluorescence microscope to image spatial patterns of the hot spring microbial mats, using shotgun metagenomic data to analyze metabolic features of the hot spring community, and, in collaboration with a postdoc, studying the environmental determinants of cyanobacterial growth.
  - **Center for Physics of Living Cells (CPLC) lab rotations** — *Aug 2018 - Jul 2019*
    Lab rotations with Jun Song (computational biology), Karin Dahmen (neural avalanches), and Seppe Kuehn (closed ecosystem).
- **Hong Kong Baptist University** — Hong Kong
  Supervisor: Changsong Zhou — *Jul 2016 - Jul 2018*
  - **Computational capacities of spiking neural networks with critical avalanches**
    We developed a spiking neural network model to perform computational tasks under supervision. The model, inspired by Liquid State Machine and excitation-inhibition balanced neurons, showed critical behaviors. We studied roles of criticality in neural computation.
  - **Cell adjacency relationships in C. elegans cell migration**
    We studied C. elegans' early embryonic development by investigating cell adjacency relationships. We showed that cell contacts were deterministic across wild-type individuals.
- **The Chinese Academy of Sciences** — Beijing, China
  Supervisors: Haijun Zhou, Changsong Zhou — *Jun 2017 - Sep 2017*
  - **Feedback connections' role on C. elegans neural signal flow**
    We studied C. elegans neural information flow by identifying feedback neuronal connections. We applied a novel simulated annealing algorithm on the network minimum feedback arc set (FAS) problem.

Teaching Experience

- **Hong Kong Baptist University** Two semesters of discussion sections of introductory physics courses.

Other Activities

- **The Abdus Salam International Center for Theoretical Physics (ICTP)** — Triest, Italy
  - **Spring College on the Physics of Complex Systems** — *Feb 2018 - Mar 2018*
    Took five graduate courses (grade: E (excellent)): Nonequilibrium behavior of quantum statistical systems (Maurizio Fagotti), Statistics of extremes in correlated systems (Gregory Schehr), Hierarchical inference (C. Mathys), Reinforcement learning (Antonio Celani), Polymer physics of chromosome folding (Angelo Rosa, Mario Nicodemi)

Programming

- Bioinformatics tools: JGI-IMG/M platform, bowtie2, samtools/pysam, bedtools/pybedtools
- Python, Java, C/C++, Matlab
- LaTeX, beamer, tikz