YICHAO GUAN

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(+1) 217 693 1416 Urbana, IL, United States

EDUCATION

Undergraduate Student — Polymer Science and Engineering Major

Beijing University of Chemical Technology

Sep 2018 – Jul 2020 — Beijing

Overall GPA 3.87/4.33 (Rank: 6/433)

Undergraduate Student — Physics Major

University of Illinois at Urbana-Champaign

Jan 2021 – May 2022 (expected) — Urbana, IL

Overall GPA 3.94/4.00

AWARDS

2021 Spring Dean's List
University of Illinois at Urbana-Champaign, Top 20%

2019 University Scholarship & Merit Student
Beijing University of Chemical Technology, Top 1%

National 2nd Prize
Chinese Mathematical Contest in Modeling
Modeled the spreading of Covid-19 using the SIR model

2018 University Scholarship & Merit Student
Beijing University of Chemical Technology, Top 1%

RESEARCH

Undergraduate Research Assistant in Prof. Jie Lin's Group

Center for Quantitative Biology

Nov 2020 - Aug 2021 — Peking University, Beijing

- Modeled the effect of single-cell growth traits variability on the growth rate of the whole population
- Used molecular dynamics (MD) simulation to investigate whether the movement of ribosomes during translation fluidizes the bacterial cytoplasm

Undergraduate Research Assistant in Prof. Ido Golding's Group

Department of Physics, Center for the Physics of Living Cells

Jan 2021 - Present — University of Illinois at Urbana-Champaign, Urbana

- Used the Gillespie algorithm to test the hypothesis that intracellular correlations in gene activity result from fluctuations in the concentration of an upstream regulator
- Using a cell cycle regulation model from literature to identify and quantify the major sources of noise in cell length distribution obtained in the experiment
- Constructed an RNA polymerase competition model to explain the cell cycle dependence of gene expression
- Using the RNAP competition model to explore the effects of genomic position, promoter strength, and growth rate on the transcription patterns of a particular gene