




# BAQIAO LIU

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## EDUCATION

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### University of Illinois Urbana-Champaign

Aug 2020 - May 2026 (Expected)

PhD in Computer Science (Area: Computational Biology)

### University of North Carolina at Chapel Hill

August 2016 - May 2020

B.S. Computer Science & B.S. Mathematics, Overall GPA: 3.62/4.0, Major GPA: 3.68

Core Courses: Bioalgorithms (A, Top 3), Algorithms and Analysis (A), Computational Geometry (A), Formal Methods (A), Compilers (A), Advanced Web Programming (A), Machine Learning & Graphics (A-), Machine Learning & ODE (A-), Cryptography (B-)

## SKILLS

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### Programming Languages

Python, Ruby, Java, Clojure, Haskell, Coq, JavaScript, C++, Scala

### Web Development

React, Vue.js, Scala.js, TypeScript

### Formal Methods

Abstract Interpretation, Basic Dependent Type Theory, Model Checking

### Mathematics

Calculus, Linear Algebra, Elementary Differential Geometry, Combinatorics

## PERSONAL PROJECTS

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### Coarse

[Project Link](#)

*A Clojure van Laarhoven Lens (Functional Getter and Setter) Library*

- Implemented Haskell algebraic structures in Clojure using multimethods
- Reimplemented the van Laarhoven encoding (functor encoding) of lens

### Impur

[Project Link](#) / [Example Output](#)

*A PureScript Static Site Generator Inspired by Hakyll*

- Implemented a static site generator that generates non JavaScript HTML5 webpages with math notation
- Designed the data types to catch invalid markup and references at compile time

## EXPERIENCE

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### Research Assistant

Aug 2018 - May 2020

*UNC Computational Genetics Working Group*

*Advisor: Leonard McMillan (Assoc. Prof.)*

- Analyzed and visualized transposable elements using Python (pandas, matplotlib) and Julia (Gadfly.jl)
- Designed algorithms for efficient clustering and classification on transposable elements

### Teaching Assistant / Learning Assistant

*University of Illinois Urbana-Champaign / UNC Chapel Hill*

- University of Illinois Urbana-Champaign: CS421 Programming Languages (Ongoing)
- UNC Chapel Hill: COMP 520 Compilers, COMP 550 Algorithms and Analysis

## AWARDS AND HONORS

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- 6th place (out of 184 teams), 2018 ACM-ICPC Mid-Atlantic USA Regional
- National First Prize, China's "15th Awarding Program for Future Scientists" (2015, Administered by the Ministry of Education and Chinese Academy of Sciences)

## MISC

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### English Fluency

GRE Verbal 169 (99%), Quantitative 167 (90%), Analytical Writing 4 (57%)

### Other Languages

Mandarin (native), Japanese (intermediate, B1)