Ziyou Hu

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Qualifications Summary

Tech-savvy and motivated individual with ongoing education in Computer Science & Mathematics and proficiency in using Python, Java, and R languages. Passionate to excel in entry-level Software Development Engineer positions.

Software Development

- Leveraging knowledge of all stages of software development, including requirements gathering, design, coding, testing, deployment, and maintenance.
- Skilled in executing software development best practices and commitment to continuous learning.

Programming Languages

- Proficient in multiple programming languages, including Python, Java, C, and R with the ability to design, implement, and maintain complex systems.
- Prudent in ensuring adherence to coding standards and writing clean and maintainable code.

Cross-functional Collaboration

- Adept at collaborating with cross-functional teams to deliver high-quality solutions on time.

Key Strengths

- Strong analytical, attention to detail, time management, and willingness to adapt to new technologies.

Academic Highlights

Bowdoin College, Brunswick, ME **2021 – 2025**
Student, Bachelor's degree in Computer Science & Mathematics (GPA: 3.97)

Analyzing efficiency and performance of algorithms using mathematical techniques. Attaining in-depth knowledge of extracting insights from large datasets using mathematical and computational methods.

- Courses: Algorithms, Computer Systems, Data Structures, Mathematical Principles of Machine Learning, Computational Game Theory, Human Computer Interaction
- Awarded with GHC Scholarship, Smyth Mathematics Prize, Kaufman Family Fellowship, and Book Award.

Research Experience

Solubility Graphs of Finite Non-Soluble Groups (Cornell University) **Jun – Jul 2023**
Mathematics Research mentored by Dr. Banafsheh Akbari

- Researched the graphical properties of the solubility graphs of finite non-soluble groups, employing the computational algebra system GAP to analyze the size of solubilizers linked to finite non-soluble groups.
- Successfully proved absence of finite non-soluble groups satisfying either Dirac's or Ore's conditions for Hamiltonian cycle.

Key projects

- **Carpooling App Design in Hack4Delta Hackathon:** Led a team of four in developing a carpooling app ("TagAlong") for college campuses within 48 hours, addressing carbon emission concerns and students' transportation needs. Streamlined team effort, implemented a calendar feature, and designed an accompanying website for the application.
- **Contextualization by Transformers:** Conducted experiments comparing CANINE (character tokenization) and BERT (subword tokenization) in transformers for contextualizing word embeddings in natural language processing. Despite the slightly lower performance, CANINE proved more flexible in word embeddings than BERT.

- **Modeling NYC's Rat Activities:** Developed a Poisson model to analyze rat activities during New York City's rodent inspections spanning 2010 to 2014. Attained probability of encountering rat activities, influenced by the total number of inspections, overshadowing the impact of seasonal variations with model accountability of 76% of explained variation.

Education

Bachelor of Arts at Bowdoin College, Expected May 2025
Bachelor's degree in Computer Science & Mathematics

Visiting Student at Dept. of Mathematics for SPUR Research Program, Jun – July 2023
Cornell University, Ithaca, NY

Awards & Accolades

Scholarship Recipient, GHC Scholars Program, AnitaB.org **2023 – Present**

- Attend events specially curated for women and non-binary technologists to boost technical skills and confidence levels.

Affiliations

Club Member, Bowdoin Women in Computer Science, Bowdoin College **2023 – Present**

- Foster a vibrant community for women and trans students within the computer science department, actively supporting each other in navigating technology careers through insights and participating in the Grace Hopper Conference.

Quantitative Reasoning Tutor, Bowdoin College **Sep 2023 – Present**

- Mentor three hours per week students in STEM courses like Introduction to Computer Science and Data Structure to help students gain quantitative reasoning skills.
- Deliver computer science concepts, such as binary search, hash map, and trees using drawings and code examples.
- Train computer science students in code designing and debugging skills through Python and Java.

Technical Proficiencies

Python, Java, C, R, Dart, HTML, Linux Operating System, IBM Cloud, Jupyter Notebook

Languages

English, Mandarin (Fluent) | Spanish, Japanese, & American Sign Language (Working Proficiency)

Certification

What is Data Science, IBM Full Stack Software Developer (In-progress)