

Samuel Lightfoot

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github.com/Bey2001

Education

B.S. in Computer Science & B.S. in Chemical Engineering, Expected Graduation 2023

Virginia Tech, Blacksburg, VA

Computer Science GPA: **3.95/4.00** & Chemical Engineering GPA: **4.00/4.00**

Related Experience

Software Engineering Intern, Peraton, Blacksburg, VA

May 2022 - Aug 2022

- Led daily Scrum check-in meetings during software architect transition
- Established automated backend integration using Maven, H2 Database Engine, Hibernate, JUnit, and Spring Boot
- Introduced Docker to containerize major components for rapid deployment on client machines and AWS
- Designed and implemented an A* pathfinding algorithm that finds the optimal path 4 times faster than former Dijkstra's algorithm

Solutions Architect, Xin Research Group, Blacksburg, VA

Aug 2021 - Aug 2022

- Coordinate machine learning algorithms to analyze various properties of chemical species and optimize catalysis processes
- Construct a web app to display data and allow public use of machine learning models in the cloud

User Interface Head, Low-Cost, Portable Antenna Range Research Group, Blacksburg, VA

May 2021 - Dec 2021

- Spearheaded modernization of a heavily-trafficked web app from an HTML-based site to React framework
- Built frontend portal to remotely access real-world experimental antenna test range

Other Experience

Undergraduate Teaching Assistant Veteran, Virginia Tech Department of Computer Science, Blacksburg, VA Jan 2022 - present

- Oversee and provide teaching training to 100+ undergraduate teaching assistants (UTA) in the Department of Computer Science
- Regularly meet with College of Engineering and Computer Science faculty to advocate for UTAs and students
- Tutor 300+ students in Data Structures & Algorithms and Computer Systems in class and office hours

Projects

Ch-E-Suite, Virginia Tech Department of Chemical Engineering

Jun 2021 - present

- Suite of instructional software for Virginia Tech faculty demonstration and student reference
- Focuses on reactor simulation and manipulation, with future development in mass transfer and separation processes

Matrix Completion for Thermodynamic Activity Coefficients, Applied Combinatorics & Graph Theory Sep 2021 - Dec 2021

- Applied matrix completion methods to predict liquid-liquid miscibility of hundreds of binary solutions
- Developed Bayesian Optimization machine learning model more accurate and less costly than laboratory experimentation

Technical Skills & Certifications

Proficient Languages	Java, Python, JavaScript, React.js, C, MATLAB
Novice Languages	SQL, C++, C#, Haskell, Prolog, Scala
Certifications	AWS Certified Cloud Practitioner

Activities

Treasurer, Jewish Student Union of Virginia Tech

Sept 2021 - present

- Oversee and plan spending of budgets for member organizations and events from other student groups

Executive Vice President, Hillel at Virginia Tech

Aug 2019 - present

- Liaison to Virginia Tech administration and 30+ other cultural organizations
- Planned and executed events with total attendance of over 16,000 people, with budget of \$500,000

President, Nazun at Virginia Tech

Aug 2019 - present

- Quadrupled membership and tripled bake sale profits, raising over \$10,000 for food relief organizations

Cymbalist, The Marching Virginians at Virginia Tech

Aug 2019 - present

Interests: Artificial Intelligence, Databases, Data Science, Machine Learning, Networking, Web Development, Software Engineering, MERN Stacks