DAVID BREWSTER

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EDUCATION

University of Illinois at Urbana-Champaign *exp.* Spring 2021
B.S. Computer Science *Dean's List*
B.S. Mathematics

RESEARCH EXPERIENCE

- **ICLUE @ UIUC** — *Algebraic Combinatorics — UIUC* Spring 2020 - Spring 2021
- **Biological Computation Group** — *Protein Folding — UIUC* Fall 2019 - Spring 2021
- **Supercomputing Genomics Group** — *DNNs for Cancer Drug Predictions — Institute for Genomic Biology* [1] Spring 2017

PAPERS

- David Brewster, Reuven Hodges, and Alexander Yong, *Proper permutations, schubert geometry, and randomness*, 2020, preprint, arXiv: 2012.09749

TEACHING

- **Future Techleaders Workshop** — *Co-instructor, Co-organizer — Perspective Charter Schools* Fall 2020 - Spring 2021
- **Intro to Algorithms & Models of Computation (CS 374)** — *Course Assistant — UIUC* Fall 2020 - Spring 2021
- **Software Design Studio (CS 126)** — *Senior Course Assistant — UIUC* Fall 2017, Spring 2019 - Spring 2020
- **Honors Intro to Computer Science (CS 196)** — *Homework Writer — UIUC* Fall 2017
- **New Horizons GSST STEM Camp: Web Design** — *Instructor — TNCC* Summer 2016

AWARDS

- **H. Roy Brahana Prize** Spring 2021

PROFESSIONAL EXPERIENCE

- **Citadel Securities** — *SWE Intern, Options Market Making — New York, NY* Summer 2019
- **Citadel** — *SWE Intern, Global Quantitative Strategies — Chicago, IL* Fall 2018
- **Two Sigma IQ** — *SWE Intern, Data Engineering — New York, NY* Summer 2018
- **Microsoft** — *SWE Intern, Azure Compute — Redmond, WA* Spring 2018
- **Google** — *SWE/SRE Intern, Zipit (Reviews) — New York, NY* Summer 2017

GROUPS

- **Blacks and African Americans in Computing (BAAC @ Illinois)** — Member
- **National Society of Black Engineers (NSBE) - UIUC Chapter** — Member
- **Illinois Programming League (IPL)** — team placed 13^{th} out of ~ 100 at 2017 Mid-Central Regional ACM-ICPC

PROGRAMMING SITES

- **Project Euler** — *Computational Mathematics* — 150+ problems solved
- **Rosalind** — *Computational Biology* — 60+ problems solved

CODE SAMPLES (ON GITHUB)

- **Random Projections** — *Approximation Algorithms for Large Matrices* — Python/NumPy
- **NLNum** — *Littlewood-Richardson coefficients and Newell-Littlewood numbers calculator* — C++/Python
- **Quasi-key Tableaux** — *Quasi-key Tableaux Calculator* — Python/TypeScript/React
- **Pong** — *Multi-threaded Pong Reinforcement Learning Environment* — C++/Python

TOOLS

Programming Languages	C/C++, Python, TypeScript, F#, Java, Golang, Sage, J (APL Dialect)
Frameworks	NumPy, Torch, Node.js, React, Tensorflow
Other Tools	AWS, Bazel, CMake, GCP, OpenMP, OR-Tools, PyBind

[1] In collaboration with Argonne National Laboratories