DAVID BREWSTER

github.com/davidb2 — linkedin.com/in/david-brewster — davidb2.github.io — davidb2@illinois.edu

EDUCATION

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

CONCENTRATIONS

Randomized Algorithms ● Probabilistic Analysis ● Biological Computation

RESEARCH EXPERIENCE

· **ICLUE @ UIUC** — *Algebraic Combinatorics* — *UIUC* Summer 2020
· **Biological Computation Group** — *Protein Folding Approximation Algorithms* — *UIUC* Spring 2020
· **Supercomputing Genomics Group** — *DNNs for Cancer Drug Predictions* — *Institute for Genomic Biology* [1] Spring 2017

TEACHING

· **Intro to Algorithms & Models of Computation (CS 374)** — *Course Assistant* — *UIUC* Fall 2020
· **Software Design Studio (CS 126)** — *Senior Course Assistant* — *UIUC* Fall 2017 - 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

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
· **Volume Technologies** — *SWE Intern* — *Champaign, IL* Fall 2016 - Spring 2017
· **Gloucester Parks, Recreation, and Tourism** — *SWE Intern* — *Gloucester, VA* Fall 2015 - Spring 2016

MEMBERSHIPS

· **Blacks and African Americans in Computing (BAAC @ Illinois)** — Member
· **National Society of Black Engineers (NSBE)** - **UIUC Chapter** — Member
· **Illinois Programming League (IPL)** — team placed 13th 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
· **Falling Blocks** — *Deep Reinforcement Learning with Hyper-NEAT* — JavaScript/React
· **Symbolic Computation** — *Parser + Lexer for Arithmetic Expressions from scratch* — F#
· **GDAX** — *Wrapper for Websocket connection to GDAX Crypto Exchange w/ Online Linear Regression* — Golang

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