

DAVID BREWSTER

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EDUCATION

University of Illinois at Urbana-Champaign

B.S. Computer Science

B.S. Mathematics

exp. Spring 2021

Dean's List

CONCENTRATIONS

Randomized Algorithms • Biological Computation • Machine Learning

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

RESEARCH EXPERIENCE

- **ICLUE @ UIUC** — *Algebraic Combinatorics* — University of Illinois at Urbana-Champaign Summer 2020
- **Biological Computation Group** — *Protein Folding Algorithms* — University of Illinois at Urbana-Champaign Spring 2020
- **Supercomputing Genomics Group** — *DNNs for Cancer Drug Predictions* — Institute for Genomic Biology¹ Spring 2017

TEACHING

- **Intro to Algorithms & Models of Computation (CS 374)** — *Course Assistant* — UIUC: Champaign, IL Fall 2020
- **Software Design Studio (CS 126)** — *Senior Course Assistant* — UIUC: Champaign, IL Fall 2017 - Spring 2020
- **Honors Intro to Computer Science (CS 196)** — *Homework Writer* — UIUC: Champaign, IL Fall 2017
- **New Horizons GSST STEM Camp: Web Design** — *Instructor* — TNCC: Hampton, VA Summer 2016

MEMBERSHIPS

- **Blacks and African Americans in Computing (BAAC @ Illinois)** — Technical Staff
- **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

¹In collaboration with Argonne National Laboratories