Ryan Brill

ryansbrill.com | ryansbrill@gmail.com

Education

University of California, Berkeley *Aug 2016 - May 2020*

- Double Major in Mathematics and Statistics
- Computer Science Minor
- GPA: 3.8

Experience

Honors Thesis, UC Berkeley *Sept 2019 - Dec 2019*

- I am intrigued by using interactive theorem provers to prove important theorems with massive proofs
- Thus I will be reading Thomas Hales' "Dense Sphere Packings: A Blueprint for Formal Proofs", which details the proof of the Kepler Conjecture using the interactive theorem provers HOL Light and Isabelle

RIPS Singapore, National University of Singapore *June 2019 - Aug 2019*

- RIPS Singapore (Research in Industrial Projects for Students) is an REU at the IMS (Institute for Mathematical Sciences) at NUS (National University of Singapore)
- Sponsored by Nvidia, my project was entitled "Exploring a Type-Theoretic Environment for Python"
- Current type-theoretic theorem provers like Coq are robust, but have a steep learning curve and are difficult to use, so Nvidia wanted us to explore creating a type-theoretic theorem proving environment in Python, with emphasis on ease-of-use and ability to link to Nvidia's ML and AI algorithms
- Created a prototype Python library
- Wrote a paper which we gave to our sponsor at Nvidia
- Will give a poster presentation at the Joint Math Meetings (JMM) Conference in Denver in January 2020

Berkeley Mathematics Directed Reading Program *Jan 2019 - June 2019*

- Read Lawrence Evans' "An Introduction to Stochastic Differential Equations" with a mathematics PhD candidate who studies PDEs and probability
- Learned about Brownian motion (including proofs of its construction, almost-sure continuity, and nowhere differentiability), the Ito Integral, Ito's product rule, Ito's Chain rule, Existence and Uniqueness theorems, its connection to finance, and most interestingly, its connection to PDEs (for instance, certain PDEs involving the Laplacian and the Feynman-Kac Formula have stochastic solutions)
- Wrote a Beamer presentation summarizing the field of SDEs, and gave a presentation to the Berkeley math community

UC Berkeley Neuroeconomics Lab - *Research Assistant* *Jan 2018 - Present*

- Assist Business School professor and psychology Ph.D. candidate with study to understand how the brain computes and represents values that allow an individual to make his economic decisions
- Build and maintain a Pygame program, used in conjunction with a dynamometer, to present participants with incentivized (paid) choice dilemmas and measure their reactions
- Will collect and analyze data to develop quantitative models to predict decision making

Calhat Enterprises - *Co-Founder* *Aug 2016 - May 2018*

- Created "Calhat," a "street" hat brand marketed to university students with branches at 5 universities: "Calhat" (UC Berkeley), "Cusehat" (Syracuse), "Slughat" (UC Santa Cruz), "Statehat" (San Diego State), and "Wildhat" (Chico State)
- Found and engaged supplier in China through Alibaba to manufacture thousands of hats
- Led guerilla marketing/branding campaign

Atme - *Creator* *Jan 2018 - June 2018*

- Created "Atme", a social media app inspired by the flaws of Instagram
- Rather than posting about yourself to show off how "cool" and "attractive" you are, you can only make posts directed at someone else, and your profile is comprised of what everyone else has said about you
- Written in Swift, connected to Firebase
- Still under development

Stout Risius Ross, LLC - *Summer Intern* *June 2018 - Aug 2018*

- Worked in the Complex Securities Valuation group of global valuation advisory firm
- Studied theoretical foundations of options pricing, including stochastic calculus, partial differential equations, the derivation of the Black-Scholes equation, and equations for Exotic Options
- Valued the carried interest of a hedge fund invested in a leading ride-share app
- Valued the earnout of an acquisition of one healthcare company by another

Programming

Skills
Python, R, Java, Swift, Excel, Github

Awards

Regents' and Chancellor's Scholarship, UC Berkeley *Aug 2016 - Present*
Awarded UC Berkeley's most prestigious scholarship for undergraduates in recognition of academic and personal achievements, such as being valedictorian, captain of varsity tennis, and my commitment to community service.

Outside Interests

Fantasy Football, Sports Betting, Producing Rap Instrumentals, Texas Holdem