

# BENNETT AUSTIN

☎ (734) 589-5641    ✉ Bennettaustin10@berkeley.edu    💻 bennettaustin.github.io

## EDUCATION

---

### University of California, Berkeley

August 2019 - December 2022

*B.A. Mathematics with Highest Distinction*

*Berkeley, California*

*Overall GPA: 3.98/4.0; Major GPA: 4.0/4.0*

- Coursework: Real and Complex Analysis, Linear and Abstract Algebra, Number Theory, Numerical Analysis, Mathematical Cryptography, Calculus 1-3, Quantum Physics, Differential Equations.
- Technical Skills: Python, Julia, SQL, Alteryx, Toad, LaTeX, C++, CERN ROOT, CAD, Excel.

## EXPERIENCE

---

### JPMorgan Chase

May 2022 - August 2022

*AI and Data Science Summer Analyst*

*Chicago, Illinois*

- Tracked the activity of non-performing mortgages by calculating the costs each loan accumulates as it passes through different loan activities (litigation, foreclosure, etc.).
- Constructed a dataset to (1) be used in an ML model that prices mortgages at an optimal rate (2) be used for budgeting purposes by the finance team.
- Using SQL, I merged records from multiple databases (e.g. Oracle, Teradata, Cloudera). Aggregated the data at the loan level to get the total cost. Data was queried in Toad and then I built an Alteryx pipeline to compose the final dataset.

### Plastic Omnium

May 2021 - August 2021

*Data Science Intern*

*Troy, Michigan*

- Wrote two ML algorithms in Julia to predict fuel tank's thickness and weld quality with projected savings of several million dollars a year and reduction of manual labor by avoiding destructive testing and manual inspection.
- Cleaned and merged four data sets with over 500,000 data points to form training and testing data before comparing different models.
- EDA and feature importances were used to provide insights about certain variables to the company.

### Lawrence Berkeley National Laboratory

September 2020 - May 2021

*Particle Physics Research Assistant*

*Berkeley, California*

- Studied particle properties to find which are most efficient in quark flavour classification using C++ and CERN ROOT. Performed feature selection on 150 variables to make training data with 5 million records.
- Trained a neural-network in Python with leptonic variables to show that these leptonic variables increase the quark identification efficiency and hence increase the algorithm's performance.
- Used Bash script to communicate to the CORI supercomputer to train the algorithm.
- Hyperparameter optimization to find the ideal learning rate, nodes, layers, and activation functions.

### Independent Research/Projects

September 2016 - Present

- Found the eigenvalues of a Möbius strip by applying specific boundary conditions to the 2-D Schrödinger equation and solving the partial differential equations.
- Proved and implemented two cryptosystems, one using RSA and the other using Elliptic Curves.
- Started a clothing company in high school, generating about \$20,000 in revenue and \$10,000 in profit. Each year we organized a community festival consisting of music, art, and skateboarding.