

Colin Potrue

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Education

University of Illinois Urbana-Champaign

Expected Graduation: May 2026

B.S. in Physics, Minors in Mathematics and Computer Science

Champaign, Illinois

- **Relevant Coursework:** Statistics & Probability I, Data Structures, Linear Algebra, Differential Equations, Multivariable Calculus, Discrete Structures, Fundamental Mathematics, Electromagnetism I, Classical Mechanics I, Relativity & Math Applications

Currently Enrolled: Probability & Data Analysis for Physics, Quantum Mechanics I, Number Theory, Numerical Methods I

Experience

ATLAS ZDC Group

March 2024 – Present

Undergraduate Research Assistant

Urbana, Illinois

- Implemented machine learning models to analyze particle collision jet streams in the Large Hadron Collider in part of a collaboration project between CERN and UIUC.
- Analyzed the accuracy and efficiency of OmniFold to "unfold" experimental effects in arbitrarily high-dimensional collision data using Python.
- Constructed and ran particle collision simulations in C++ to generate data using ROOT, LHAPDF, Pythia, and other relevant libraries.
- Developed knowledge in particle physics, machine learning, and the research process through reading papers, attending group meetings, and presentations.

Codecraft Corporation

May – June 2024

Data Science Intern

Remote

- Analyzed data to gain insight into military shooting range simulations through statistical analysis.
- Organized, cleaned, and accessed relevant data using SQL, pandas, and other developing tools.

Association for Quantitative Trading Education

January 2024 – Present

Member

Champaign, Illinois

- Attended weekly meetings to learn about various concepts in the quantitative finance industry and go over problems in probability, statistics, and other related fields.
- Competed in market making games and trading competitions.

Projects

Chess Engine | Python, NumPy

- Developed a fully functional chess engine in Python using the Lichess and chess API's.
- Implemented a search method using Alpha Beta Pruning to optimize efficiency in finding and evaluating the best possible moves.

Algorithmic Trading Bot | Python, NumPy, Matplotlib, pandas

- Constructed a momentum-based trading strategy back tested over several years of data from yfinance.
- Used Matplotlib, pandas, and NumPy to visualize, manipulate, and extract statistical metrics from relevant data.

Skills & Interests

Programming Languages: Python, C++, Java, R

Libraries: NumPy, pandas, Matplotlib

Extracurricular Involvement: AQTE, Poker Club, Chess Club, SIGma (Math and Algorithms in CS)

Personal Interests: Poker, Chess, Fitness, Golf, Travel, Music