

# Henry Yu

henry.yu094@gmail.com | +1 901-359-1068

[github](#) | [linkedin](#)

## EDUCATION

### Bachelor of Science - Computer Science

Indiana University, School of Informatics and Computing

Aug 2023 - May 2027

Bloomington, IN

### High School

Memphis University School - Magna Cum Laude

Aug 2019 - May 2023

Memphis, TN

## RELEVANT COURSES

Intro to Software Systems | Data Modeling and Inference | Discrete Mathematics | Linear Algebra

## SKILLS

**Languages** Python | Java | C | OpenQASM

**Developer Tools** Git | Docker | Kubernetes | VS Code | Visual Studio | JetBrains IDEs | Qiskit

**Libraries** pandas | NumPy | Matplotlib | Seaborn | scikit-learn | Keras | Pytorch

## EXPERIENCE

### Quantum Computing Research

Indiana University

Sep 2023 - May 2024

Bloomington, IN

- Solo project as only first-year undergrad in research lab involving analysis of correlations between qubit features and error probability.
- As of Dec 2023, 10% increase in prediction performance over initial base model.

### Private CS and Math Tutor

Indiana University

Sep 2023 - Dec 2023

Bloomington, IN

- Provided small custom study plans for customized learning experiences for 3 total Java, Python, and linear algebra students.
- Improved code proficiency to the point where self-dependency was achieved.
- Improved grades by an average of a whole letter grade above class average by end of semester.

## NOTABLE PROJECTS

### Influence of Qubit Features on Error Rates

Undergraduate Researcher | Python, Qiskit, scikit-learn

Sep 2023 - Dec 2023

Bloomington, IN

- Scraped and processed data from IBM Quantum System backends using Qiskit API.
- Ran time series analysis in the form of multiple ElasticNet regression for 7-qubit ibm\_perth and 7 127-qubit machines.
- First-ever project involving the analysis of 127-qubit system features in the school.
- Nominated as one of the top posters in end-of-semester event for professionalism and deep knowledge of topics researched.

### Breaking the Cycle: Reducing Recidivism in Iowa State Prisons

5-Man Team | Python, pandas, Matplotlib, Keras, LaTeX

Sep 2022 - Apr 2023

Memphis, TN

- Analyzed the probability of prisoners re-offending by utilizing a feedforward neural network.
- Evaluated the FNN using AUC-ROC score, SHAP analysis, multiple regressions, and Monte Carlo simulations.
- Placed 2nd nationwide with a publication; \$15,000 reward split between group of 5.

### Riding into the Future: Evaluating E-Bikes

5-Man Team | Python, pandas, Matplotlib, Keras, LaTeX

Apr 2023

Memphis, TN

- Conducted long-term impact of E-bike usage by first determining popularity of e-bikes using NLP techniques like sentiment analysis on Twitter tweets in the past year.
- Implemented many regression models like exponential regression and double gamma regression along with Monte Carlo simulations to provide a range of possible sales.
- Determined that years 2022-2025 will only see 9% increase in sales while 2025-2028 will see 54% increase.
- Found that a group of 10,000 e-bike users reduce 1190 CO<sub>2</sub> emissions per year, saving the government around \$220,000 per year.
- Acknowledged as one of the top 3% of teams in technical computing.

## PUBLICATIONS

- **Henry Yu**, Lou Zhou, Amar Kanakamedala, Jeffrey Liu, and Evan Wu, "Breaking the Cycle: Reducing Recidivism in Iowa State Prisons," 2023.2 ARCH, Education and Research Section of the Society of Actuaries.