Technical Experience Summary

Harris Social Impact Fellowship

The Harris Social Impact Fellowship seeks applicants who demonstrate strong critical reasoning skills and the ability to engage with technical and analytical thinking grounded in logic, rigor, and precision. These skills may be developed from experiences such as academic coursework, research projects, labs, internships, or work experience, particularly in STEM-related fields such as economics, data science, biology, physics, computer science, engineering and other disciplines with rigorous methodological training.

We do not expect applicants to have mastered the technical tools required for their Fellowship placements prior to the program. Our eight-week summer quarter is designed to equip Fellows with core skills in data analysis, research methods, and evidence-based problem solving. We are looking for applicants who demonstrate strong critical reasoning, intellectual curiosity, and the ability to learn and apply technical tools and skills in real-world settings.

Instructions:

To help us better understand your preparation for the Fellowship, please submit a 1-page statement in a straightforward, succinct, and easy-to-read format. Include no more than six examples of your relevant technical, analytical, or research experiences.

Examples of what you might include:

- **Advanced analytical or quantitative coursework** (e.g., econometrics, statistics, experimental physics)
- **Research design and evaluation** (e.g., survey work, lab protocols, hypothesis testing)
- **Data-focused or computational work** (e.g., data cleaning, coding in Python or R, web scraping)
- **Lab work involving measurement, instrumentation, or scientific precision** (e.g., biology, engineering, physics, chemistry)
- **Software development, automation, or technical writing projects**

We are especially interested in how you've applied structure, evidence, or logic to answer questions, design experiments, or solve problems.

The table on the following page provides an example of how you might structure your technical experience. Please keep descriptions concise and specific.

Harris Social Impact Fellowship Technical Experience Summary Example

Course / Experience	Description of Technical Skills and Tools
Advanced Econometrics Grade: A Fall 2023	This course covered bivariate and multivariate regression models, the associated distribution theory, and testing procedures; corrections for heteroskedasticity, autocorrelation, and simultaneous equations; interpretation of linear regression under heterogeneous treatment effects; and maximum likelihood estimators. Weekly problem sets involved using R and Stata. Coursework included a final project that applied causal inference methods to evaluate the impact of a public housing policy intervention.
Molecular Biology Lab – Advanced Cell Systems Grade: A- Spring 2024	Conducted weekly experiments involving DNA extraction, gel electrophoresis, and spectrophotometry. Regularly calibrated micropipettes and spectrophotometers to ensure accurate measurement of reagents and sample concentrations. Designed and executed a multi-week protocol to quantify gene expression changes under different temperature conditions, requiring careful control of variables and precise timing. Developed lab reports interpreting quantitative results and identifying sources of experimental error.
Quantitative Research Design Grade: A Spring 2021	Designed a survey-based experimental study to evaluate messaging strategies on voter turnout. Developed a pre-analysis plan and applied OLS and logistic regression using R. Wrote a final paper interpreting results and methodological limitations.
Data Science Club - Software Project Lead Fall 2023	Led a student team to build a Python-based tool that scrapes public transportation data and visualizes delays across city bus routes. Designed and implemented the backend pipeline using BeautifulSoup and pandas for data ingestion and cleaning, and used Plotly and Dash to create interactive visualizations. Collaborated using GitHub for version control and implemented unit testing to ensure reliability. The tool was presented at a campus demo day and is used in the club's annual workshop series.
AI/ML Research Intern – Industrial Systems Lab Summer 2023	Worked on predictive maintenance algorithms using multi-modal sensor data from industrial equipment. Developed deep learning models in PyTorch to detect failure patterns in time-series and vibration data, comparing recurrent and convolutional neural networks. Applied signal processing for feature extraction and created evaluation metrics for rare event detection. Findings were presented to the research team and contributed to a white paper under review.