Charles Cui

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EDUCATION

PH.D. IN COMPUTER SCIENCE | NORTHWESTERN UNIVERSITY
Sep 2020 - Expected Jun 2025 | Evanston, IL
Areas: Algorithms, Data Science, Data Visualization, Economics and Computation | GPA: 3.90/4.00

BACHELOR OF ARTS | OBERLIN COLLEGE
Aug 2016 - May 2020 | Oberlin, OH
Majors: Mathematics & Computer Science, High Honors | GPA: 4.06/4.00

RELEVANT EXPERIENCE

NORTHWESTERN UNIVERSITY | GRADUATE RESEARCHER
Sep 2020 - Present | Evanston, IL
- Targeting inequality issues in resource allocation problems by integrating microeconomic models and computer science algorithms to invent novel theoretical solutions; validate methods with probability theory, statistics, and algorithmic design.
- Developed a test that measures people's ability to detect visualization misinformation. Conducted Bayesian data analysis on experimental data from 500 participants. Implementing an adaptive test that more efficiently assesses this ability.
- Led a team of six undergraduate students for software development and maintenance of an online peer grading platform. Conducted UI and data visualization research to improve students' and instructors' experience with the platform.
- Presented a tutorial on **Data Externalities** at the **FAccT 2021 conference** to 50+ participants to encourage the study of the economic consequences of data usage in the computer science academic community.

DATA SCIENCE FOR SOCIAL GOOD FELLOWSHIP PROGRAM | SUMMER FELLOW @ CARNEGIE MELLOW UNIVERSITY
May 2022 - Aug 2022 | Pittsburgh, PA
- Built a machine learning pipeline to improve call routing of the 988 National Suicide Prevention Lifeline which serves $2,000,000+$ callers per year. Obtained preliminary results that could help $\sim 20,000$ more callers per year upon validation.

UNIVERSITY OF CHICAGO CONSORTIUM ON SCHOOL RESEARCH | RESEARCH INTERN
Mar 2022 - May 2022 | Remote
- Conducted clustering analysis in R on Chicago Public Schools data to aid the prediction of students' college graduation rate.

HOMERISER, INC. | COFOUNDER, HEAD OF DATA SCIENCE
Dec 2020 - Sep 2021 | Remote
- Co-founded a real estate technology start-up and developed a financial model in Python that simulated cash flow and generated a detailed profit and losses statement.

UNIVERSITY OF MARYLAND, COLLEGE PARK | SUMMER RESEARCHER
Jun 2019 - Aug 2019 | College Park, MD
- Developed a machine learning model and a prototype website for advance healthcare directives. Deployed active learning algorithms to dynamically select survey questions based on patients' previous responses to learn their preferences.

SKILLS

• Python • R • PostgreSQL • HTML • CSS • JavaScript • Mathematica • LaTeX • Git

PUBLICATIONS AND WORKING PAPERS

- *Can an Algorithm be My Healthcare Proxy?*
  McElfresh, DC, S Dooley, **Y Cui**, K Griesman, W Wang, T Will, N Sehgal, and JP Dickerson
  Workshop on Health Intelligence at AAAI-20 & Explainable AI in Healthcare and Medicine
- *CALVI: Critical Thinking Assessment for Literacy in Visualizations*
  L Ge, **Y Cui**, M Kay
  Under Review
- *Data-driven Call Routing for 988 Suicide & Crisis Lifeline*
  T Afonja, **Y Cui**, P Subías-Beltrán, I Tang
  In Prepraration