

# JUNCHENG (VINCENT) LIU

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## EDUCATION

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### University of Chicago Harris School of Public Policy

Chicago, Illinois

Master of Science in Computational Analysis and Public Policy

*Expected June 2023*

Relevant Coursework:

- Computer Science with Applications II
- Applied Policy Communication Lab
- Data Visualization for Public Policy
- Program Evaluations (Spring)
- Survey Questionnaire Design (A)
- AI Applications in Social Science (A-)

### University of Minnesota Twin Cities

Minneapolis, Minnesota

Bachelor of Arts in Statistical Practice

*May 2021*

Bachelor of Science in Sociology of Law, Criminology, and Deviance

Membership: Phi Beta Kappa

Minor in Political Science

DirectTrack to Teaching, English as a Second Language (ESL) Teaching Track

Relevant Coursework:

- Criminal Procedure (A)
- Teaching as a Profession I (A)
- Juvenile Delinquency (A)
- Teaching as a Profession II (A)

## CORE COMPETENCIES

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- Software: R, STATA, Python, git, Tableau, Postgresql, Sqlite, html, javascript, d3, ggplot, plotly, leaflet, tidyverse, pandas
- Technical: Data storytelling, geospatial visualization, web scraping, statistics, machine learning, natural language processing
- Communication: Policy and technical writing, strategic planning, storytelling, project management (Agile framework)
- Language: English (full professional competency), Mandarin (native or bilingual)

## INTERNSHIP EXPERIENCE

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### Urban Institute

Hybrid (Remote and Washington, DC)

*Data Science and Policy Intern at Center on Nonprofits and Philanthropy (CNP)*

*June 2022 – August 2022*

- Transformed the Nonprofit Sector In Brief paper to a R Shiny portal using the NCCS database and IRS-BMF (Business Master File) data to embed user interactions and interactive visualizations
- Developed a flex dashboard that utilizes a storyboard design in R with 20+ interactive charts and maps to communicate stories about the US nonprofit sector in 2019 from different to policymakers and researchers
- Created 10+ helper functions to simplify data scraping, data cleaning, and visualization processes and reduce the time

### Skokie School District 73½ (Education Pioneer)

Hybrid (Remote and Skokie, Illinois)

*Financial Liaison Intern (Education Pioneer Fellow)*

*June 2022 – August 2022*

- Wrote a grant independently, including creatively developing a grant document, making grant rubric sheets in Excel, and brainstorming application procedures, in order to ease teachers' difficulties and reinforce district priorities
- Formulated a Request for Proposal (RFP) paper with the bidding information for the district's demographic projection service
- Created a slideshow to introduce and compare different population projection methods and present it to the financial committee
- Visualized district financial data with graphs like diverging bar charts and pie charts to show annual fiscal surplus and deficit

### Crown School of Social Works

Chicago, IL

*Research Assistant, the Smart Decarceration Initiative*

*February 2022 – June 2022*

- Coauthored a research paper that used interview to study teachers' racialized perceptions of BLM at a Chicago Public School
- Organized data collection and cleaning for the CAT-MH project (System-wide Adaptive Mental Health Measurement and Risk Reduction for Probationers in Cook County, Illinois)

### Juvenile Supervision Center, Department of Correction and Community Rehabilitation (DOCCR)

Hennepin County, MN

*JSC Intern*

*August 2019 - March 2020*

- Interviewed 9 juveniles with screening questions regarding their socioeconomic backgrounds and previous drug and alcohol consumption information to connect them to government programs and other resources
- Conducted juvenile intake with probation officers and center staff to record the time and nature of juveniles' offenses

## ACADEMIC PROJECTS

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### Project with BPI (Business and Professional People for the Public Interest)

*Project for CAPP 31300: Data Science Clinic (operated through Data Science Institute)*

*September 2022 – Present*

- Cleaned, wrangled, and exploratively analyzed the Chicago Police Department crime data in Python using *Pandas* and *Seaborn*
- Developed a pipeline in Python to calculate the age-adjusted probability of being a driver for each racial group and drawing splines using the Illinois Department of Transportation and American Community Survey data

### Diving into New York Times News Article at Four Time Points – Through natural language processing and deep learning

*Final Project for MACS 31900: AI Applications In Social Science*

*March 2022 – June 2022*

- Applied natural language processing algorithms to preprocess and analyze data and visualized it with word clouds and charts
- Employed unsupervised machine learning (K-means) and deep learning in Python to grasp a deeper understanding of data
- Developed helper functions to create text preprocessing pipeline and simplify natural language tasks

### Police-Public Relation and Trust in Chicago Survey

*Final Project for PPHA 34600: Survey Questionnaire Design*

*March 2022 – June 2022*

- Developed a survey of 20 questions to measure Chicagoan's attitudes on the policing practice of Chicago Police Department officers and diverse police reform strategies under the supervision of Prof Bautista, Director of General Social Survey, NORC

### Food in the Hood – A Cross Analysis of Food Security and Crime Level in 72 Chicago Neighborhoods

*Final Group Project for CAPP 30122: Computer Science with Applications II*

*January 2022 – March 2022*

- Utilized Python *Plotly* and *Geojson* libraries to produce a visualization report in Jupyter Notebook with 8+ interactive graphics to describe the food accessibility and crime level information of Chicago's 72 communities
- Modeled data with linear regressions to predict crime levels based on education and food availability

### A Diverging Road Ahead - An Examination of Police Power at the Street Level

*Sociology Capstone Project for SOC 4994W: Independent Research*

*January 2021 - May 2021*

- Studied the 2018 Police-Public Contact Survey data with weighted logistic regressions and weighted regressions in R to research issues of racial profiling and neighborhood-targeted policing
- Synthesized 20+ sources including 5+ Supreme Court case rulings and pondered two suggestions for police reforms emphasizing community policing and accountability in a 25-page final report

## COMMUNITY INVOLVEMENT

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### Justice Page Middle School (Public School)

Virtual (Google Meet)

*Classroom Assistant*

*January 2021 – May 2021*

- Facilitated 10+ in-class exercises in breakout rooms with 35+ students in a 6th grade social study class
- Tutored English writing to 10+ immigrants and English learners that possessed divergent English writing and speaking abilities

### UCLA Covid-19 Behind Bars Data Project

Virtual

*Data Science Volunteer, Immigration Detention Team*

*August 2020 – May 2021*

- Produced time-series plots with moving averages in R by deploying *ggplot2* package to detect changes in active COVID cases, infection cases, and death counts at over 100 ICE detention facilities

### Community United Against Police Brutality

Minneapolis, MN

*Grassroots Organizer*

*October 2018 - September 2021*

- Researched the Minneapolis Police Department body-worn camera policies and officers' fear-based training background to collect evidence of inappropriate use of force in the killing of Mr. Thurman Blevins
- Developed a curriculum with Minnesota Literacy Council to teach immigrants, refugees, and other English learners their legal rights in front of police officers in scenarios of home searches, traffic stops, and street encounters

### Restorative Justice Community Action

Minneapolis, MN

*Community Member*

*October 2018 - September 2021*

- Offered 30+ restorative solutions to 20+ participants to facilitate offenders' reentry into society
- Practiced a restorative justice approach focused on family/community relationship building to tackle crimes and recidivism as alternatives for traditional punishment, such as probation and imprisonment

### Roosevelt High School (Public School)

Minneapolis, MN

*Classroom Assistant*

*September 2019 - December 2019*

- Supported 3 teachers in one 9<sup>th</sup> grade EL (English Language) and one 9<sup>th</sup> grade Algebra classes
- Graded 30+ students' vocabulary homework and tutored 10 students high-school algebra and geometry