SAYORN CHIN

Doctoral Candidate | Data Scientist

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EMPLOYMENT EXPERIENCE

Data Scientist

Mountain Data Group

 Jan. 2022 — Ongoing   Fort Collins, CO

I perform data wrangling involving the collection, classification and storage of computer-aided dispatch crime data.

Crimes known to police do not capture all incidents of crime in a community. For various reasons, criminal offenses that cause alarm, distress, and calls for service in one community may go unreported to police in other communities. To enable reliable comparison across communities, I combine data on crimes known to police with victimization and perception of security survey data, local demographics, and economic conditions that are correlated with reporting behavior.

Each source of crime data is inspected and interrogated to flag and correct missing information, data-entry errors, periodic revisions, and irregular fluctuations in reported crimes. To correct the data, I cross-reference the behavior of crime types across sources and deploy various signal detection algorithms to see crime risk over time and at neighborhood, county, state, and national scales.

I use a wide variety of statistical and machine-learning algorithms to forecast crime risk. I pit the algorithms against one another in a double-elimination tournament, assessing the predictive accuracy of each algorithm against unseen crime risk data. The crime risk forecasts are calculated from an ensemble of winning algorithms for each crime type and community.

Data Science Intern

Mountain Data Group

 May 2021 — Jan. 2022   Fort Collins, CO

I examined the relationship between daylight saving time and population's well-being using Twitter API. I constructed a measure of subjective well-being using natural language processing algorithms that map unstructured words from geolocated Twitter updates to measures of emotional state or what commonly known as expressed sentiment. I then used this measure to estimate the causal impact of daylight saving time on population's well-being using advanced statistical and econometric techniques.
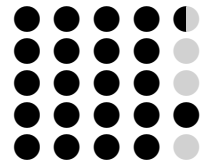
Research Analyst Intern

Colorado College Quantitative Reasoning Center

 Jan. 2016 — May 2016   Colorado Springs, CO

I worked with the Quantitative Reasoning Center to perform data pre-processing, aggregate relevant statistics and performed regression analyses to study the academic achievement gap of students at Colorado College. I used the model to help the admission staff made decision about admitting prospective students.

TECHNICAL SKILLS

Python
R
MySQL
Git/GitHub
Stata

CERTIFICATIONS

Tools for Data Science

Data Science Methodology

Statistics Essential for Data Science

Programming Fundamental

R Programming for Data Science

Python for Data Science

Python for Data Science, AI Development

Python Project for Data Science

Databases and SQL for Data Science

Data Visualization with Python

Data Analysis with Python

Machine Learning with Python

For more information about the credentials, please visit my **Credly** profile.

EDUCATION

Doctor of Philosophy in Economics

Colorado State University

 Anticipated May 2023

Master of Arts in Economics

Colorado State University

 Dec. 2019

Bachelor of Arts in Mathematical Economics

Colorado College

 May 2017

RESEARCH

Research Fields

Applied Microeconomics, Health Economics, Public Economics

Topics of Interest

Policy Evaluation, Health Policy, Health and Social Inequality, Longitudinal Data Analysis, Applied Machine Learning

📄 Working Papers

Miller, R., Chin, S., & Sedai, A. (2022). The Welfare Cost of Late-life Depression. Under Review at *Journal of Economic Behavior and Organization*.

📄 Work in Progress

A.K, S., & Chin, S. (2022). Does Better Fuel Choice Lead to Better Employment? An Analysis by Gender and Caste in India.

Chin, S., & Miller, R. (2022). Beyond Income: Health, Wealth, and Racial Welfare Gaps Among Older Americans.

Chin, S., & Zahran, S. (2022). Daylight Saving Time and Population's Well-Being: Evidence from Twitter.

Zahran, S., Chin, S., Fremstad, A., & Numa, G. (2022). The Compensation of Conscience: Evidence from Occupational Switching.

TEACHING EXPERIENCE

Graduate Teaching Instructor

Department of Economics, Colorado State University

📅 Jul. 2020 — Ongoing   📍 Fort Collins, CO

As a sole instructor, I am responsible for creating my own course contents and syllabi. I teach undergraduate course on economic development that focuses on the economics of developing countries in a comparative perspective to economic conditions in developed countries. I also teach both introductory and intermediate level courses in microeconomics and macroeconomics.

Graduate Teaching Assistant

Department of Economics, Colorado State University

📅 Aug. 2017 — May 2020   📍 Fort Collins, CO

As a graduate teaching assistant, I was responsible for conducting weekly recitation, grading, and holding office hour. I was a teaching assistant for introductory level courses in microeconomics, macroeconomics, and econometrics.

HONORS & AWARDS

Competition Committee Member. The AFIT–AFEE 17th Annual Student Scholars Award Competition, 2022.

Winner of $300 Prize. The AFIT–AFEE 16th Annual Student Scholars Award Competition, 2021.

Awarded $312,320 in Financial Aid based on Academic Merit. Colorado College, 2013.

Awarded $80,000 in Financial Aid based on Academic Merit. The Davis United World College Scholars, 2013.

Winner of $386,114 Prize. Five–Year United World College of South East Asia Cambodian Student Scholarship Competition, 2008.

CONFERENCE PRESENTATIONS

The Western Social Science Association's 63rd Annual Virtual Conference, 2021.

PROFESSIONAL AFFILIATIONS

American Economic Association

American Society of Health Economists