Chengjie Diao

Department of Economics, Queen's University   6476768057
94 University Ave, Kingston, Canada   16cd27@queensu.ca

RESEARCH

Industrial Organization, Financial Microstructure, Deep Learning

EDUCATION

Ph.D. in Economics   Expected 2023
Queen's University

Master of Computer Science (Flexible Online)   Expected 2025
Georgia Institute of Technology

Master of Economics   2016
University of Wisconsin-Madison

Bachelor of Business Administration   2013
University of New Brunswick

PAPERS

Dealers' Relationship, Capital Commitment and Liquidity   Job Market Paper

Consolidation and Advertising Rates: A Study of the Impact of Newspaper Ownership Swap on Community Newspapers in Ontario

Search and Inventory Management   with Evan Dudley and Amy Sun

Papers can be found at https://github.com/cdiao31/Paper

TEACHING ACTIVITIES

Teaching Assistant
Econ 370 Urban and Regional Economics   Fall 2017
Econ 445 Industrial Organization and Public Policy   Winter 2018
Econ 310 Microeconomic Theory II   Fall 2019
Econ 241 Economic Aspects of Selected Social Issues   Fall 2019
Econ 250 Introductory Statistics   Winter 2019
Econ 840 Public Economics I   Fall 2020
Econ 452 Applied Econometrics   Winter 2021

EMPLOYMENT

Quant Part Time   2020 -2021
Overbond

- Utilized SAS, Python, and Matlab to merge, clean, and validate large transaction datasets like Trace, CRSP. Merged and Transformed data into a structured and coherent format for bond forecasting research.

- Researched academic literature and developed a new liquidity measure "half spread". integrated it into bond forecasting strategy.

- Conducted data wrangling, augmentation, and normalization. Used sklearn to implement support vector machine learning in bond price forecasting, resulting aprox 15% increase in accuracy.

DEEP LEARNING PROJECT

Performed data augmentation for imbalanced datasets and designed CNN to achieve a higher accuracy on CIFAR-10. Analyzed attribution methods including saliency map, guided backdrop, and GradCam to refine model structures. Tuned hyper parameters to enhance learning efficiency.

COMPUTER SCIENCE PROJECT

Programmed in C to construct multi-threading structures based on machine architecture and integrated exclusion locks. Designed structures to optimize address space switches during inter-process calls. Used OpenMP and OpenMPI for parallel programming, implementing barrier algorithms to reduce race contentions such as centralized sense reversing, software combining tree, and MSC tree barriers on NCC NUMA machines. Programmed in C and utilized qemu-kvm and libvirt to devise a CPU scheduler for virtualization systems, reducing the standard deviation of CPU usage to below 5%. Dynamically allocated memory for efficient virtual machine operation using a memory taxing and subsidy policy via the balloon driver.

PROGRAMMING SKILLS

C, C++, Java, Ruby, Javascript, Python, Matlab, Stata, R, SAS

TOOLS

gRPC, Pytorch, OpenMP, OpenMPI, Sklearn, Captum, SQL Server, libvirt, EJB

STATISTICAL SKILLS

Time Series Analysis, GMM and MLE estimation, Panel Data, Convolution Neural Net, Recurrent Neural Net, Long Short Term Memory, Transformer, Support Vector, Random Forest, Boosting

LANGUAGE

English: Fluent Mandarin: Native Japanese: Aprox N2 Level

REFERENCE

Robert Clark
Professor, Associate Head, Department of Economics
Queen's University
Email:rc99@queensu.ca

Nahim Bin Zahur
Assistant Professor, Department of Economics
Queen's University
Email:nz17@queensu.ca

Huw Lloyd-Ellis
Professor, Department of Economics
Queen's University
Email:lloydelh@queensu.ca