

# Junlei Chen

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## EDUCATION

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### Universität Zürich

Master of Arts UZH in Business and Economics

Major: Banking and Finance, Minor: Data Science, Classification: *magna cum laude*

Zürich, Switzerland

September 2018 – July 2021

### Peking University

Bachelor of Economics

Major: Risk Management and Insurance

Beijing, China

September 2014 – July 2018

## PROFESSIONAL EXPERIENCE

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### University of Pennsylvania, Penn Wharton Budget Model (PWBM)

Associate Economist under Prof. Kent Smetters

Philadelphia, United States

October 2021 – Present

- Conducted applied economics research examining college tuition responses to the implied subsidies created by federal student financial aid reforms
- Produced public policy analysis on diverse topics, including Federal Student Loan reforms, U.S. healthcare system reforms, Build Back Better Act climate reforms
- Published 10+ briefs on budgetary cost and distributional effects of U.S. Student Loan Forgiveness, Income-Driven Repayment Plan, cited by major press such as New York Times, the Washington Post, and Bloomberg
- Delivered guest talks at Q&A presentations at Public Policy Certificate programs on topics such as College Financing and Student Loan Reforms

### Universität Zürich, Department of Economics

Research Assistant under Prof. Florian Scheuer

Zürich, Switzerland

November 2020 – July 2021

- Utilized Python to conduct independent data analysis with Pandas libraries for a project on the optimization of tax on U.S. entrepreneur revenues
- Contributed to the calculation of 105,000+ companies' classification, founder's share evolving time series based on venture-based deal record database from data sets such as PitchBook and PrivCo
- Conducted web scraping using Python libraries such as BeautifulSoup and request to gather cap-table information on 1,000+ IPO companies
- Used wptools Python API to sparse 500+ founders' information from Wikipedia into a structured data set, combined with Natural Language Toolkit (NLTK) libraries to filter founder names

### Bain & Company

Part-time Consulting Associate

Beijing, China

December 2015 – September 2016

- Researched on market competitors in the food/healthcare/e-commerce industries
- Used Excel VBA to accelerate the process of collecting webpage data and information by 200%
- Industrial report data collection and analysis

## SELECTED PROJECTS

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### Tuition Effects of IDR Plans – Evidence from the Introduction of the PAYE Repayment Plan

with Prof. Kent Smetters and Dr. Jesús Villero, Working Paper, PWBM

January 2024 – Present

- Accepted at the 117<sup>th</sup> National Tax Association (NTA) Annual Conference, presented on Nov 15, 2024
- Studied the effects of an increase in the generosity of income-driven repayment (IDR) plans on net tuition (tuition less school-provided financial aid) using policy-induced variation from the introduction of the Pay As You Earn (PAYE) repayment plan in 2012
- Estimated future wages and the present value of loan repayment savings based on student SAT score, college, major, gender, race, parents' income, and other attributes using restricted-access, cross-sectional data sets
- Using a triple difference framework, identified that selective colleges increase their net tuition to capture about \$42 for every \$100 in potential loan repayment savings, and modest to null effect for non-selective colleges

## SELECTED PROJECTS (CONT.)

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### **Budgetary Cost and Distribution Analysis on President Biden's Student Loan Forgiveness Plans**

under the direction of **Prof. Kent Smetters**, *Brief Series*, PWBm

*August 2022 – October 2024*

- Built budgetary cost projection model for federal student loan based on historical U.S. Direct loan and Federal Family Education Loan portfolio data released by the Department of Education in years 2000-2024
- Using publically available data Survey of Consumer Finance (SCF), constructed President Biden's student loan forgiveness benefit distribution impact on U.S. household income percentiles, gender, race, educational attainment, etc.
- Merged restricted-access, individual-level data with PWBm Microsim projection, calculated updated Income-Driven Repayment take-up rate, the corresponding subsidy rate, and the cost of the potential behavioral changes such as borrowing increase and more institutions qualifying for federal financial aid programs

### **Solving Macroeconomic Models for Ranges of Economic Parameters Using Deep Learning**

supervised by **Prof. Felix Kübler** and **Prof. Marlon Azinović**, *Master Thesis*, UZH *September 2020 – March 2021*

- Used unsupervised Machine Learning (ML) method to solve two distinct macroeconomic growth models from Brock and Mirman (1972) and Heaton and Lucas (1996) with recursive policy function solutions
- Designed and implemented neural network framework in Python within TensorFlow 2.0, taking Euler equation residuals, occasional binding borrowing constraints, idiosyncratic shocks process into account
- Conducted model training process on AWS SageMaker as well as Google Colab platform using GPU computing power which reduced the model training time from 8 hours to within 15 minutes
- By extending the input space of the Neural Networks, developed automatic calibration of economic parameters to match real-world economic indices using stochastic gradient descent approach

## SKILLS

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- **Programming Languages:** Python, R, Stata, Shell scripting, SQL
- **Python Libraries:** Pandas, Numpy, Statsmodels, Scipy, Matplotlib, BeautifulSoup, Numba, TensorFlow
- **Tools/Technologies:** Git, Visual Studio Code, L<sup>A</sup>T<sub>E</sub>X
- **Languages:** Mandarin (Native), English (C2), German (B1)

## CERTIFICATES

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### **Coursera Course: Applied Machine Learning in Python**

*June 2024*

issued by University of Michigan

### **Coursera Course: Introduction to Data Science in Python**

*August 2020*

issued by University of Michigan

### **Coursera Course: Python for Data Science, AI & Development**

*June 2024*

issued by IBM

### **Coursera Course: Hands-on Introduction to Linux Commands and Shell Scripting**

*July 2024*

issued by IBM

### **NVIDIA Course: Fundamentals of Accelerated Computing with CUDA Python**

*March 2022*

issued by NVIDIA

## REFERENCES

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Prof. Kent Smetters

Boettner Professor

Wharton School

University of Pennsylvania

Email: [smetters@wharton.upenn.edu](mailto:smetters@wharton.upenn.edu)

Prof. Florian Scheuer

UBS Foundation Professor of Economics of Institutions

Department of Economics

Universität Zürich

Email: [florian.scheuer@uzh.ch](mailto:florian.scheuer@uzh.ch)

Prof. Felix Kübler

Professor of Financial Economics

Department of Finance

Universität Zürich

Email: [fkubler@gmail.com](mailto:fkubler@gmail.com)

Prof. Marlon Azinović

Assistant Professor

Economics Department

University of North Carolina at Chapel Hill

Email: [azinovic@sas.upenn.edu](mailto:azinovic@sas.upenn.edu)