

# SONGYANG RUAN

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Henry Fok Pearl Jubilee College(HFPJC), University of Macau, Macau, China

## EDUCATION

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**University of Macau (UM),** Macau SAR, China  
B.S. in Business Intelligence and Data Analytics Aug., 2019 - Jun., 2023  
Cumulative GPA: 3.8/4.0 (Top 5%)

**Peking University,** Beijing, China  
Globex Julmester Program, Summer School July, 2022  
Courses: Data Driven Techniques for e-Business, Sustainability Theory and Practices

**Cornell Institute for China Economic Research (CICER), Cornell University,** Ithaca, U.S.  
CICER Summer Program in Business and Economics, Summer School July - Aug., 2021  
Sessions: R Programming, Behavioral Economics, Corporate Finance, Academic Research Seminars in Microeconomics, Talking with the Leading Economist from the World Bank;  
University of Macau Summer School Sponsorship

**Xi'an Jiaotong University,** Xi'an, China  
Big Data Management and Application, Semester Exchange Mar. - July, 2021  
Courses: Data Structures and Algorithms, Java Programming, Optimization Theory, Applied Statistics Analysis, Network and Information Security, Discrete Mathematics, Principle of Electronic Business;  
University of Macau Exchange Scholarship

## CERTIFICATE

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### Coursera:

*Mathematics for Machine Learning: Linear Algebra*, Imperial College London

*Introduction to GIS Mapping*, University of Toronto

*Differential Equations for Engineers*, The Hong Kong University of Science and Technology

*Numerical Methods for Engineers*, The Hong Kong University of Science and Technology

## RESEACH EXPERIENCE

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### High-Dimensional Financial Index Tracking Based on the Regularization Approach

Asia-Pacific Academy of Economics and Management, UM

**Research Assistant**, Supervisor: Prof. Jet, Lianjie Shu Sept., 2021 - Present

- Programing in R and Python to formulate thirty trading strategies with around 80% win rate in American stock markets and Chinese stock markets in the last 40 years
- Adopting technical analysis, machine learning, and NLP techniques to formulate trading strategies
- Using the R Shiny package to do trading visualization and formulate an interactive website

### How Can Travel Vloggers Shape Travel Destination Images

Faculty of Business Administration, UM

**Research Assistant**, Supervisor: Prof. Fiona, Xi Yang Dec., 2021 - Mar., 2022

- Crawled data in Python from user-generated content websites and analyze comments, users' profile
- Used NLP to distinguish different languages and evaluate contents' sentiments

### The Impacts of State and Local Taxation on Firm Location Decision

Winter School, CICER, Cornell University

**Research Group Member** Nov., 2021 - Feb., 2022

- Econometrics, covering OLS, RDD, DID, IV, GMM; introduction to research; and research seminars
- Used R, Python, and Stata to show the data patterns of tax rates, tax expenditures, and tax exemptions on a spatial level
- Used IV, IV Probit, IV Tobit model analyzing how competition between localities affects tax breaks and business location decisions
- Won Team Engagement Excellence Award for final research report

## WORK EXPERIENCE

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**Bayer Healthcare,** Guangzhou, China  
*Developer Intern* *July, 2022 - Present*

- Maintain and develop a medical data analysis software GUI, which incorporates region-of-interest feature selection, data visualization, and machine learning, in Python and R
- Apply machine learning models, DNN, LSTM, CNN, GAN, for estimating pharmacokinetic parameters of dynamic contrast-enhanced magnetic resonance imaging (DCE-MRI) to assist clinical diagnosis

## EXTRACURRICULAR ACTIVITIES

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*Member, University of Macau Postgraduate Association Calligraphy Club* *2019 - 2022*

- Organized soft/hard pen calligraphy competition in UM
- Organized calligraphy tutorship each week by inviting famous Macau calligraphers

*College Badminton Team, HFPJC* *2019 - 2022*

- Champion of 2021 University Badminton Competition

*Treasurer, Business Analytics Association, University of Macau Students' Union* *2022*

- Financed association activities and reported quarterly

*College Librarian, HFPJC* *2020*

- Organized literary seminars and provided book sharing events for college students

*Voluntary Teacher, HFPJC* *Sept. - Dec., 2020*

- Delivered remote English courses for primary school students in Congjiang, Guizhou Province

*Volunteer, Changsha Wildlife Conservation Association* *Aug., 2020*

- Chinese medicine market investigation on pangolin scale for pangolin conservation
- Propagated Pangolin conservation information on electronic media

## HONOURS AND STIPENDS

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Dean's Honour List *2019 - 2022*

Henry Fok Foundation Scholarship *2022*

University of Macau Student Research Assistant Stipends *2022*

University of Macau Residential College Foundation Scholarship *2020*

Luso International Bank Whole Person Development Scholarship *2020*

The Gold Award of Whole Person Development Program *2020*

## SKILLS

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### Language:

Fluent in English: IELTS 7.0; CATI Level-3

Native in Chinese; Fair in Cantonese; Elementary in Japanese and German

### Computer:

Python, R, Java, C/C++, SQL, Hadoop, Hive, MATLAB,  $\text{\LaTeX}$

Microsoft Office, Access, Visio, Project; SPSS, Stata, Tableau; Linux