

## Publications

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25 publications (9 first author), 537 citations and a h-index of 13 (Google Scholar, 2024).

### First author publications:

1. **The adaptive market hypothesis of Decentralized finance (DeFi).** (Zhang, Y., Chan, S & Chu, J). *Applied Economics* (2022), 55 (42), pp.4975-4989.
2. **Exact Distribution of the Max/Min of Two Correlated Random Variables.** (Zhang, Y., & Nadarajah, S). *Wireless Personal Communications* (2021), 116 (3), 1593-1612.
3. **On the Market Efficiency and Liquidity of High-Frequency Cryptocurrencies in a Bull and Bear Market.** (Zhang, Y., Chan, S., Chu, J. & Sulieman, H). *Journal of Risk and Financial Management* (2020), 13, 8. **[41 citations]**
4. **The Generalised hyperbolic distribution and its subclass in the analysis of a new era of cryptocurrencies: Ethereum and its financial risk.** (Y. Zhang., J. Chu., S. Chan. & B. Chan). *Physica A: Statistical Mechanics and its Applications* (2019), 526, 120900.
5. **Extreme value analysis of high-frequency cryptocurrencies.** (Zhang, Y., Chan, S., & Nadarajah, S). *High Frequency* (2019), 2(1), pp.61-69.
6. **Stylised facts for high frequency cryptocurrency data.** (Zhang, Y., Chan, S. & Chu, J). *Physica A: Statistical Mechanics and its Applications* (2019), 513, pp. 598-612. **[64 citations]**
7. **A review of backtesting for Value at Risk.** (Zhang, Y. & Nadarajah, S). *Communications in Statistics – Theory and Methods* (2017), Taylor & Francis Online, 47 (15), pp. 3616-3639. **[60 citations]**
8. **Flexible heavy tailed distributions for big data.** (Zhang, Y. & Nadarajah, S). *Annals of Data Science* (2017), Springer, 13 (4), pp. 1-12.
9. **On partially-truncated distributions.** (Zhang, Y. & Nadarajah, S). *Communications in Statistics – Simulation and Computation* (2017), Taylor & Francis Online, 47 (6), pp. 1623-1631.

### Other publications:

10. **Interconnections and contagion among cryptocurrencies, DeFi, NFT and traditional financial assets: Some new evidence from tail risk driven network.** (Liao, X., Li, Q., Chan, S., Chu, J., & Zhang, Y). *Physica A: Statistical Mechanics and its Applications*, (2024, [In Press](#)).
11. **P051 Development and evaluation of a text-analytics algorithm for automated application of the BSR COVID-19 shielding criteria in rheumatology patients** (Jani, M., Alfattni, G., Belousov, M., Zhang, Y., Cheng, M., Webb, K., Kanter, A., Dixon, W., & Nenadic, G). *Rheumatology*, (2023), 62(Supplement\_2), pp.kead104-092.
12. **The epidemiology of Psoriatic Arthritis in the UK: A health intelligence analysis of UK Primary Care Electronic Health Records 1991-2020.** (Druce, K., Zhang, Y., Dixon, W. & McBeth, J). *Rheumatology*, (2023), kead586, <https://doi.org/10.1093/rheumatology/kead586>
13. **An analysis of the return-volume relationship in decentralised finance (DeFi).** (Chu, J., Chan, S & Zhang, Y). *International Review of Economics & Finance* (2023), 85, pp.236-254. <https://doi.org/10.1016/j.iref.2023.01.006>.
14. **An extreme value analysis of the tail relationships between returns and volumes for high frequency cryptocurrencies.** (Chan, S., Chu, J., Zhang, Y., & Nadarajah, S). *Research in International Business and Finance* (2022), 59, 101541. **[28 citations]**
15. **Bitcoin versus high-performance technology stocks in diversifying against global stock market indices.** (Chu, J., Chan, S., & Zhang, Y). *Physica A: Statistical Mechanics and its Applications* (2022), 580, 126161.
16. **Count regression models for COVID-19.** (Chan, S., Chu, J., Zhang, Y., & Nadarajah, S). *Physica A: Statistical Mechanics and its Applications* (2021), 563, 125460. **[30 citations]**
17. **Discrete analogues of continuous multivariate probability distributions.** (Wiegand, M., Nadarajah, S. & Zhang, Y). *Annals of Operations Research* (2020), 292, pp.183-190.
18. **Bias reduction in the population size estimation of large data sets.** (Chu, J., Zhang, Y. & Chan, S). *Journal Computational Statistics and Data Analysis* (2020), 145, p.106914.
19. **High frequency momentum trading with cryptocurrencies.** (Chu, J., Chan, S. & Zhang, Y). *Research in International Business and Finance* (2020), 52, 101176. **[39 citations]**
20. **The adaptive market hypothesis in the high frequency cryptocurrency market** (Chu, J., Zhang, Y. & Chan, S). *International Review of Financial Analysis* (2019), 64, pp.221-231. **[106 citations]**
21. **An investigation of effective factors on children's growth failure in Iran using multilevel models.** (Azarbar, A., Zhang, Y. & Nadarajah, S). *Quality & Quantity* (2018), pp. 1-8.
22. **Wrapped: An R Package for Circular Data.** (Nadarajah, S. & Zhang, Y). *Journal of PLOS one* (2017), 12(12), e0188512.
23. **On sums of independent generalised Pareto random variables with applications to insurance and CAT bonds.** (Nadarajah, S., Zhang, Y. & Pogany, T). *Probability in the Engineering and Informational Sciences* (2017), Cambridge University Press, 32 (2), pp. 296-305.
24. **Examples of zero correlation not implying independence.** (Nadarajah, S. & Zhang, Y). *The Mathematical Scientist* (2016), Applied Probability Trust, 41 (2).

25. **New bivariate wrapped distributions** (Nadarajah, S. & Zhang, Y). *Journal of Mathematics and Statistics* (2016), Science Publications, 12 (4), pp. 206-212.

#### Refereed Journal Papers under review:

1. **The interplay between cryptocurrencies and phishing crimes: Ethereum under the microscope** (Zhang, Y., Lord, N., Chan, S., Chu, J. & Zhang, Y) (2024).
2. **Enhancing Security in Blockchain Networks: Anomalies, Frauds, and Advanced Detection Techniques** (Osterrieder, J., Chan, S., Chu, J. and Zhang, Y) (2024). Available at SSRN. <https://doi.org/10.48550/arXiv.2402.11231>

#### Books and Books Editor

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- **Blockchain and Cryptocurrencies** (Chan, S., Chu, J., Zhang, Y., & Nadarajah, S). *J. Risk Financial Manag.* (2020). <https://doi.org/10.3390/books978-3-03943-534-0>.

#### Books Chapters

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- **Stylized facts of decentralized finance** (Zhang, Y., Chan, S., Chu, J., Lao, X. and Min, H), in La Torre, D. (ed.) *AI for Finance and Beyond*. World Scientific Publishing Europe, (June 2024). <https://doi.org/10.1142/q0449>

#### Software Packages

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- Nadarajah, S, Zhang, Y, (2017). R package **"Wrapped"**, Computes the probability density function, cumulative distribution function, quantile function and random numbers for 40 univariate wrapped distributions. R package version 1.0. <http://cran.r-project.org/web/packages/Wrapped/index.html>