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Alan L. Zhang

Education

2015–2021 **Ph.D. in Finance** *Georgia State University*, Atlanta, GA.
J. Mack Robinson College of Business

2013–2014 **M.S. in Finance** *Johns Hopkins University*, Baltimore, MD.
Carey Business School

2009–2013 **B.A. in Economics** *Xiamen University*.

Research Interests

- FinTech: Machine Learning, Textual Analysis
- Investments and Asset Pricing: Hedge Funds, Mutual Funds
- Corporate Finance: Disclosures

Publication

[1] **Copycat Skills and Disclosure Costs: Evidence from Peer Companies' Digital Footprints** *with Sean Cao, Kai Du, and Baozhong Yang*, ***Journal of Accounting Research***, forthcoming.
*Presentations: PNC Finance Conference at University of Kentucky, 16th GMARS Research Symposium at Michigan State University, 2019 Georgia Tech SESARC Conference, CICF 2019, FMA 2019, MFA 2020, Bentley, Chinese University of Hong Kong, Georgia State, Hong Kong University of Science and Technology, Louisiana State, Nanyang Technological University, Pennsylvania State

Working Papers

[2] **Uncovering Mutual Fund Private Information with Machine Learning**.
*Presentations: 2021 China International Risk Forum (scheduled), Conference on Financial Innovation at Stevens Business School, Winter Conference on Machine Learning and Business at University of Miami, 11th Financial Markets and Corporate Governance Conference PhD Symposium, 2nd Lixin Conference on New Frontiers in Finance, Georgia State

[3] **How to Talk When a Machine is Listening: Corporate Disclosure in the Age of AI** *with Sean Cao, Wei Jiang, and Baozhong Yang*, R&R, ***Review of Financial Studies***.
*Coverage: *NBER Digest Lead Article, Bloomberg, CNBC, Financial Times, The Guardian, Columbia Law School Blog, Oxford Business Law Blog*
*Presentations: NBER Big Data and Securities Markets Conference, NBER Economics of AI Conference, AFA 2022 (scheduled), Cambridge Centre for Alternative Finance Sixth Annual Conference (scheduled), Adam Smith Workshop 2021, FIRS 2021, CICF 2021 (scheduled), CAPANA Research Conference (scheduled), RCFS Winter Conference, Winter Conference on Machine Learning and Business at University of Miami, Third Bergen FinTech Conference, SOAR Symposium at Singapore Management University, Conference on Financial Innovation at Stevens Business School, Columbia, EDHEC, Harvard, London Business School, Maryland, Michigan State, Peking University, Toronto, Utah, Washington, Future of Financial Information at Stockholm Business School

[4] **Deep Learning Mutual Fund Disclosure: Risk Sentiment, Risk Taking, and Performance** *with Sean Cao and Baozhong Yang*.
*Presentations: CICF 2021 (scheduled), 2nd Conference on Emerging Technologies in Accounting and Financial Economics (CETAFE) at Cornell University (cancelled due to COVID-19)

[5] **Can Hedge Funds Correct Mispricing and Provide Liquidity? Evidence from the Reg SHO**.
*Presentations: FMA 2018, 14th APAD Conference, Georgia State

Selected Work in Progress

- **Can Mutual Fund Investors Identify "Smart Money"?***(with Vikas Agarwal)*
- **Do Hedge Funds Know Which Hedge Funds are Good?**

Coverage for Research

- *IR Magazine*, April 2, 2021, **When a Machine is Listening, CEOs Talk Differently**
- *Quartz*, January 24, 2021, **A 2011 Dictionary is Reshaping the Language of Corporate Reporting**, by Samanth Subramanian
- *NBER Digest (Lead Article)*, December 2020, **Corporate Reporting in the Era of Artificial Intelligence**, by Dylan Parry
- *VentureBeat*, December 27, 2020, **How Machines are Changing the Way Companies Talk**, by Khari Johnson
- *Financial Times*, December 5, 2020, **Robo-Surveillance Shifts Tone of CEO Earnings Calls**, by Robin Wigglesworth
- *The Guardian*, December 5, 2020, **Companies are Now Writing Reports Tailored for AI Readers – and It Should Worry Us**, by John Naughton
- *Oxford Business Law Blog*, October 21, 2020, **How to Talk When a Machine is Listening: Corporate Disclosure in the Age of AI**
- *ZeroHedge*, October 21, 2020, **Companies are Changing the Language in Their Quarterly Reports to Appeal to Algos**, by Tyler Durden
- *Bloomberg*, October 20, 2020, **Sweet-Talking CEOs Are Starting To Outsmart The Robot Analysts**, by Gregor Stuart Hunter
- *CNBC*, October 20, 2020, **Corporate Execs are Talking Differently on Earnings Calls to Please the Machines**, by Bob Pisani
- *Columbia Law School Blue Sky Blog*, October 1, 2020, **How to Talk When a Machine is Listening: Corporate Disclosure in the Age of AI**

Academic Experiences

2018–Present **Instructor** *Georgia State University*.

- Corporate Finance (2018 Fall, 2019 Spring, 2019 Summer, 2019 Fall and 2020 Fall)
  - Teaching Evaluation: 4.7/5 (last 5 sections)
- Financial Analysis and Introduction to Loan Structuring (Case study course, 2020 Spring)
- New Student Orientation (2020 Fall)

2017–2020 **CEAR Scholar** *Center for the Economic Analysis of Risk*.

2018 **Visiting Ph.D. Student** *Paris Dauphine University*.

2015–2018 **Graduate Research Assistant** *Georgia State University*.

2014–2015 **Teaching Assistant** *Johns Hopkins University*.

Fellowships and Awards

2020 **GTA Teaching Excellence Award** *J. Mack Robinson College of Business, GSU*.

2020 **AFA Travel Grant**.

2019 **FMA Semi-finalist of the Best Paper in Investment**.

2018–2019 **GSU Doctoral Student Travel Grant** *five times*.

2018 **Travel Grant for Research Seminars** *Paris Dauphine University*.

2018–2021 **CEAR Scholarship** *GSU*.

2009, 2010 **Scholarship recipient** *Xiamen University*.

Conference and Seminar Presentations

2021 Cambridge Centre for Alternative Finance Sixth Annual Conference (scheduled), CICF (scheduled), Conference on Financial Innovation at Stevens Business School, CAPANA Research Conference (scheduled), Winter Conference on Machine Learning and Business at University of Miami, RCFS Winter Conference, 11th Financial Markets and Corporate Governance Conference, 2nd Lixin Conference on New Frontiers of Finance

2020 Third Bergen FinTech Conference at NHH Norwegian School of Economics, Georgia State, MFA

2019 CICF, FMA

2018 14th APAD Conference, FMA, Georgia State

2017 Georgia State

Discussions

2021 Artificial Intelligence and High-Skilled Work: Evidence from Analysts, Jillian Grennan, Roni Michaely – Winter Conference on Machine Learning and Business at University of Miami

2020 The Market for Corporate Control as a Limit to Short Arbitrage, Costanza Meneghetti, Ryan Williams, Steven Chong Xiao – Research Conference on Financial Economics in Honor of Jayant Kale

2019 Out of Sight No More? The Effect of Fee Disclosures on 401(k) Investment Allocations, Mathias Kronlund, Veronika Pool, Clemens Sialm, Irina Stefanescu – Financial Management Association Annual Meeting

2019 Are Mutual Fund Managers Good Gamblers? Roberto Stein – Financial Management Association Annual Meeting

2018 Geographic Clustering of Institutional Investors, Donghyun Kim, Qinghai Wang, Xiaoqiong Wang – Financial Management Association Annual Meeting

Professional Services

Session Chair FMA 2018

Review Committee FMA 2020, 10th Annual FMA Applied Finance Conference, EFA 2020, FMA 2019, 9th Annual FMA Applied Finance Conference, EFA 2019, SFA 2018

Professional Affiliations

- American Finance Association
- Financial Management Association

Skills

Computer SAS, Python, Stata, LaTeX, Matlab, Perl

References

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Summaries of Research Papers

[1] **Copycat Skills and Disclosure Costs: Evidence from Peer Companies' Digital Footprints** *with Sean Cao, Kai Du, and Baozhong Yang*.
* ***Journal of Accounting Research***, forthcoming.
We examine whether firms that imitate peer companies' strategies (copycats) profit from such behavior and how their success may cause competitive harm to disclosing companies. We identify copycat companies by tracking the digital footprints of investment companies that view disclosures on the SEC EDGAR website. We find that copycat companies are able to identify profitable trades that outperform other trades disclosed by the copycatted companies by 5.5% annually. Such stock-screening skills are related to investment sophistication and research intensity. Furthermore, copycats inflict greater damage on the performance of disclosing companies when they possess superior copycat skills, when disclosed trading strategies take longer to complete, and when disclosed stock holdings are characterized by high information asymmetry.

[2] **Uncovering Mutual Fund Private Information with Machine Learning**.
This paper implements natural language processing (NLP) models and neural networks to predict mutual fund performance using the textual information disclosed in mutual fund shareholder letters. Informed funds identified by the prediction model deliver superior abnormal returns and are more likely to receive an upgrade in Morningstar ratings. Informed funds also attract greater flows in three days and up to 24 months after the disclosure of shareholder letters, especially when their disclosure has greater investor attention, suggesting that investors recognize the information from the qualitative disclosure. The machine learning model shows that informed funds tend to discuss sector specializations, portfolio risk taking, big picture of the financial market, and mixed strategies across assets. Collectively, this study shows that mutual fund disclosure contains rich, value-relevant textual information that can be analyzed by state-of-the-art machine learning models and help investors identify informed funds.

[3] **How to Talk When a Machine is Listening: Corporate Disclosure in the Age of AI** *with Sean Cao, Wei Jiang, and Baozhong Yang*.

* R&R, ***Review of Financial Studies***

Growing AI readership, proxied by expected machine downloads, motivates firms to prepare filings that are friendlier to machine parsing and processing. Firms avoid words that are perceived as negative by computational algorithms, as compared to those deemed negative only by dictionaries meant for human readers. The publication of Loughran and McDonald (2011) serves as an instrumental event attributing the difference-in-differences in the measured sentiment to machine readership. High machine-readership firms also exhibit speech emotion assessed as embodying more positivity and excitement by audio processors. This is the first study exploring the feedback effect on corporate disclosure in response to technology.

[4] **Deep Learning Mutual Fund Disclosure: Risk Sentiment, Risk Taking, and Performance** *with Sean Cao and Baozhong Yang*.

We use a deep learning model to extract syntactic structures from mutual fund managers' narrative discussion and construct forward-looking risk sentiment measures. These measures capture the manager's sentiment and consciousness about the risks facing a mutual fund. Managers with a more negative (positive) risk sentiment are more likely to reduce (increase) their portfolio risk in the subsequent period. Managers who are conscious about negative risk generate superior risk-adjusted return and higher Sharpe ratio, and are more likely to have higher intra-quarter trading skills, measured by return gap. Risk-conscious managers also obtain higher Morningstar ratings and attract greater flows from sophisticated investors, giving incentives to managers to report their risk sentiments. Given their forward-looking nature, our new measures can inform investors and researchers about fund managers' risk management and investment decisions. Our study also calls for more applications of deep learning models in textual analytics that can reveal and analyze linguistic features previously inaccessible to researchers.

[5] **Can Hedge Funds Correct Mispricing and Provide Liquidity? Evidence from the Reg SHO**.

This paper studies the effects of hedge fund arbitrage activities on mitigating mispricing and providing stock liquidity by employing the Securities and Exchange Commission (SEC) Regulation SHO pilot program as a natural experiment. Pilot stocks that are associated with hedge fund arbitrage activities experience a decrease in abnormal returns and an increase in liquidity after the Reg SHO. The results are more pronounced for stocks that are more likely to have binding short-sale constraints and are robust when controlling for breadth of ownership and trading activities of other institutional investors. Overall, hedge funds help correct mispricing and improve stock liquidity.