

**PRESS RELEASE**  
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NIKKO ASSET MANAGEMENT CO., LTD.

## Nikko AM Quants Analyst Co-authors Published Academic Paper about Japanese Text Mining in the Financial Domain

Nikko Asset Management Co., Ltd. (Nikko AM), today announces that a paper co-authored by employee Masahiro Suzuki has been published in Volume 60, Issue 2, of prestigious international academic journal "Information Processing & Management". This peer-reviewed journal presents ground-breaking research on information and computing science theory, methods, and applications in a range of domains.

The paper, "Constructing and analyzing domain-specific language model for financial text mining" highlighted the effectiveness of Bidirectional Encoder Representations from Transformers (BERT). BERT is a machine learning technique for natural language processing that has proven highly effective for sentiment and similarity analysis, but difficult to apply to financial text due to highly specialised terminology. The study explored how the authors researched and built a more precise BERT model for Japanese text that adapts better to the financial domain.

Suzuki is a quants analyst and member of Nikko AM's Investment Technology Fund Management Department and Japan Equity Fund Management Department. The paper's co-authors were Professor Kiyoshi Izumi, Project Lecturer Hiroki Sakaji, and Ph.D. student and Technical Assistant Masanori Hirano, all from the University of Tokyo's Graduate School of Engineering.

Nikko AM has long focused on deep learning research that harnesses Japanese text data and image data from the financial sector in order to better analyse portfolio companies, the economy, and capital markets, while bolstering its quants investment performance and risk management. The firm will continue to enhance its investment management expertise through further study, tapping the findings of its research and ongoing collaboration with other stakeholders.

### **About the paper**

#### **1. Title**

Suzuki, M., Sakaji, H., Hirano, M., & Izumi, K. (2023). Constructing and analyzing domain-specific language model for financial text mining. *Information Processing & Management*, 60(2), 103194.

[Constructing and analyzing domain-specific language model for financial text mining - ScienceDirect](#)

#### **2. Abstract**

The application of natural language processing (NLP) to financial fields is advancing with an increase in the number of available financial documents. Transformer-based models such as Bidirectional Encoder Representations from Transformers (BERT) have been successful in NLP in recent years. These cutting-edge models have been adapted to the financial domain by applying financial corpora to existing pre-trained models and by pre-training with the financial corpora from scratch. In Japanese, by contrast, financial terminology cannot be applied from a general vocabulary without further processing. In this study, we construct language models suitable for the financial domain. Furthermore, we compare methods for adapting language models to the financial domain, such as pre-training methods and vocabulary adaptation. We confirm that the adaptation of a pre-training corpus and tokenizer vocabulary based on a corpus of financial text is effective in several downstream financial tasks. No significant difference is observed between pre-training with the financial corpus and continuous pre-training from the general language model with the financial corpus. We have released our source code and pre-trained models.

#### **3. Information Processing & Management website**

[Information Processing & Management | Journal | ScienceDirect.com by Elsevier](#)

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Headquartered in Asia since 1959, Nikko Asset Management and its subsidiaries employ personnel representing around 25 nationalities, including approximately 200 investment professionals\*\*. The firm has a presence through subsidiaries or affiliates in a total of 11 countries and regions. More than 400 banks, brokers, financial advisors and life insurance companies around the world distribute the firm's products.

The investment teams benefit from a unique global perspective complemented by the firm's historic Asian DNA, striving to deliver consistent excellence in performance. The firm also prides itself on its progressive, solution-driven approach, which has led to many innovative funds launched for its clients.

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