STUDY GROUP 2021-2022, PROGRAMMING/CONTINUING EDUCATION COMMITTEE, CFA SOCIETY JAPAN

Artificial Intelligence in Investment Management:

[A] General Sessions

- **Purposes:** Participants are expected to [1] learn basics of artificial intelligence (especially machine learning) in investment management and then [2] earn PL credits from CFA Institute. Educational materials by CFA Institute are presented in the **References** section below. We assume some (or all) of the participants move onto the next [B] Special Sessions after completion of this [A].

- **How we proceed:** Participants study by themselves by using the materials and ask questions on monthly Zoom calls. Each Zoom call covers a certain pre-specified part of the materials. Moderators and other particpants answer to the questions. Additionally, we encourage participants to catch up on a voluntarily and (bi-)weekly basis.

- **Deliverable(s):** N/A. (Each participant will earn PL credits from CFA Institute as a personal achievement.)

- **Moderator(s):** Akio Sashida, CFA and Yoshimasa Satoh, CFA + other volunteers

[B] Special Sessions

- **Purposes:** Participants with basic / advanced knowledge and experience in artificial intelligence are expected to complete a research and developement project together. Research themes should be practically and/or academically meaningful.

- **How we proceed:** First off, participants discuss and decide what kind of project they hope to launch. For guidance, please refer to Exhibit 37 Stylized Decision Flowchart for Choosing ML Algorithms of "Machine Learning" which is introduced in the **References** section. Then the project will be managed in a democratic and collaborative manner. Tasks and progress will be reviewed on regular monthly Zoom calls.

- **Deliverable(s):** [B1] co-author and publish a blog article at https://blogs.cfainstitute.org/investor/ or a research paper at https://www.cfainstitute.org/en/research/financial-analysts-journal, [B2] make a presentation at a seminar/webinar by CFA Society Japan, and/or [B3] co-develop Python programs to analyze data in a machine learning approach and gain insights from that data (Note: Deliverables will be intelectural property in co-ownership amongsts direct contributors. It can be publicly presented on each individual's personal page of Github https://github.com/, based on mutual agreements.)

- **Moderator(s):** Akio Sashida, CFA and Yoshimasa Satoh, CFA + other volunteers

Schedules

Tentative schedules, which might vary, are as follows.

Table 1 – Timeline [A] General Sessions

Sessions	Name	Pre-assignment (See References)	Monthly Zoom call
[A] General	*Intro*	*N/A*	• *2021/9/22 (Wed) 18:30 [Completed]* • *2021/9/28 (Tue) 11:30 [Completed]*
[A] General	**Fintech in Investment Management**	• **"Fintech in Investment Management." (p.1-24)**	• **2021/10/20 (Wed) 19:00**
[A] General	Machine Learning #1	• "Machine Learning." (p.1-32, from 1. Introduction to 5. Supervised Machine Learning Algorithms)	• 2021/11/17 (Wed) 19:00
[A] General	Machine Learning #2	• "Machine Learning." (p.33-71, from 6. Unsupervised Machine Learning Algorithms to the end)	• 2021/12/15 (Wed) 19:00

Table 2 – Timeline [B] Special Sessions

Sessions	Name	Pre-assignment (See References)	Monthly Zoom call
[B] Special	**Research & development project designing phase**	• **A number of well known steps for a small end-to-end machine learning project:** • **1. Define a problem to be solved.** • **2. Prepare (alternative/big) data.** • **3. Evaluate machine learning algorithms.** • **4. Improve the outcome by reviewing and updating 2. data and 3. algorithms; re-defining a problem as in 1 might be needed.** • **5. Present final results.**	**2021/9/22 (Wed) - 2021/12/15 (Wed)** **Communications via email plus periodic Zoom calls, which are to be arranged by moderators**
[B] Special	Special Session #1-#10	• TBD	Monthly review calls on the 3rd Wed of the month: • 2022/1/19 (Wed) 19:00 • 2022/2/16 (Wed) 19:00 • 2022/3/16 (Wed) 19:00 • 2022/4/20 (Wed) 19:00 • 2022/5/18 (Wed) 19:00 • 2022/6/15 (Wed) 19:00

Sessions	Name	Pre-assignment (See References)	Monthly Zoom call
			• 2022/7/20 (Wed) 19:00
			• 2022/8/17 (Wed) 19:00
			• 2022/9/21 (Wed) 19:00
			• 2022/10/19 (Wed) 19:00

Evaluation of Alternative Data Providers

Alternative data provideds and evaluation results are as follows.

Table 3 – Evaluation of Alternative Data Providers

#	Name	Data Coverage and Venues	Free-trial / sample data	One-off/recurring fees in JPY terms	Availability on publications
1	FactSet	• https://www.factset.com/marketplace/catalog • FactSet, AWS, and Snowflake	• TBD	• TBD	• TBD
2	Japan Alternative Data Accelerator Association	• TBD	• TBD	• TBD	• TBD
3	Neudata	• TBD	• TBD	• TBD	• TBD

Zoom Calls:
#1 2021/10/12 (Tue) 11:00 JST
#2 2021/10/20 (Wed) 11:00 JST
#3 2021/10/26 (Tue) 21:30 JST

References

- Robert Kissell, PhD, and Barbara J. Mack. 2019. "Fintech in Investment Management." CFA Institute Refresher Reading 2022 CFA Program Level I Reading 55. https://www.cfainstitute.org/membership/professional-development/refresher-readings/fintech-investment-management or https://bit.ly/3uMzaiV. (*)

- Kathleen DeRose, CFA, and Christophe Le Lannou. 2020. "Machine Learning." CFA Institute Refresher Reading 2021 CFA Program Level II Reading 7. https://www.cfainstitute.org/membership/professional-development/refresher-readings/machine-learning or https://bit.ly/3lfCzDE. (*)

- (Optional) Söhnke M. Bartram, Jürgen Branke, Mehrshad Motahari. 2020. "Artificial Intelligence in Asset Management." Research Foundation Literature Reviews https://www.cfainstitute.org/en/research/foundation/2020/rflr-artificial-intelligence-in-asset-management

* These documents are only for CFA Institute members and please do not share the Dropbox links above with other non-members.

Members

- Akio Sashida, CFA a.sashida80@gmail.com [A][B]

- Erik David McBain, CFA erik.mcbain@boosted.ai [B] (Ottawa, Ontario, Canada)

- James Sullivan, CFA j.sullivan@refinitiv.com [B]

- Michinori Kanokogi, CFA, mkanokogi@gmail.com, kanokogi_m867@nam.co.jp [A][B]

- Piotr Pomorski, CFA piotr.pomorski@outlook.com [B] (London, UK)

- Shuxin Yang, CFA shuxin.yang@toki.waseda.jp [B]

- Tomokuni Higano, CFA tomokuni.higano@gmail.com [B]

- Tsuyoshi Yamakawa, CFA fifth.of.may0505@i.softbank.jp [A]

- Yasuhiro Oshima, CFA yasuhiro11oshima@gmail.com [A]

- Yoshimasa Satoh, CFA satoh@cfaj.org [A][B]

NOTE: This document will be updated on a regular basis as this iniative goes along.