Financial Data Professional Institute

Bill Kelly, CEO, CAIA Association
Mehrzad Mahdavi, Executive Director, FDP Institute
Hossein Kazemi, Senior Advisor, CAIA Association
Mirjam Dekker, Project Manager, FDP Institute

www.fdpinstitute.org

July 17, 2019
Agenda

• Welcome
• Quick Logistics
• Introductions – today's presenters

Bill Kelly  
CEO  
CAIA

Dr. Mehrzad Mahdavi  
Executive Director  
FDPI

Dr. Hossein Kazemi  
Sr. Advisor FDPI  
Sr. Advisor CAIA

Mirjam Dekker  
Project Manager  
FDPI
Welcome
Quick Logistics
Introductions

**Todays Objectives**

- **Why the program was created**
  - Industry trends & Implications for professionals
  - Why CAIA initiated the FDP Institute

- **What is the FDP institute**
  - About FDP

- **Who the Program is intended for**

- **How you can obtain your FDP credential**
  - Details about the prerequisite classes and the exam

- **When can you start?**
Industry Trends

- Companies pursue cutting-edge tools and technologies
  - To keep pace with the competition
  - To retain top talent
  - To future proof their business

- Companies setup multidisciplinary data science teams
  - Touch a variety of specialties within data science and analytics.

- Financial firms integrate machine learning and analytics strategies for investment and trading and many other offerings.

- Use of data science is spreading to more industries
  - Finance, Advertising /Marketing, Tech, Energy Industry, Healthcare/ Medical, Retail/ CPG ...

Source: *2019 Predictions for Data Science & Analytics in Financial Services – Burtchworks*
Implications

• Emergence of the “data science citizen” role to liaise between Data Science team and other stakeholders

• Opportunities for quantitative professionals in investment banking are continuing to pick up steam.

• As demand increases for specialized skillsets, the search becomes more challenging (Shortage!)

• Companies are looking for data science and analytics leaders who remain hands-on with the data.

Source: 2019 Predictions for Data Science & Analytics in Financial Services – Burtchworks
Why CAIA initiated the FDP Institute

Disrupt Yourself, Before Somebody Else Does it For You
Financial Data Professional Institute

Our Mission
Be the global professional designation of choice for financial professionals with data science and analytics skills

Our Vision
Skill-up the financial professionals to leverage disruptive changes in the industry.

Our Strategy
Provide state-of-the-art tools, resources, and education packaged for the financial professionals

The FDP Charter is designed to elevate the skill set of professionals who work in the Financial Sector
Designed by Financial Professionals for Financial Professionals

Curriculum developed by a combination of academia and industry practitioners

Finance  Math/Stat  FDP  Coding

MARTLET  ALPHA SIMPLEX  AIFI  PANAgora  SOKAT

ACADIAN  RAM  ARTIFICIAL INTELLIGENCE FINANCE INSTITUTE  SEGAL MARCO ADVISORS

Columbia Business School  Barings  CalPERS  STATE STREET  PEARLQUEST

ISENBERG SCHOOL OF MANAGEMENT  INVESCO  JOHNS HOPKINS CAREY BUSINESS SCHOOL

the journal of financial data science
The FDP Designation *compliments* Existing Designations

- **Future Proof** your career in the fast-growth area of data-driven investing
- **Skill-up** in quantitative products, big data and machine learning
- **Champion** in bridging the gap between finance and data science
- **Earn** the only global designation for financial professionals in AI and data science
- **Participate** in the hottest job market in financial sector
Profile of an FDP Candidate

- Fundamental and quantitative analysts, investment professionals, and portfolio managers new to data science and machine learning

- Financial professionals new to data-driven methodologies

- Machine learning enthusiasts interested who want to apply their skillsets with financial organizations

- Analysts: Use new data sources and ML tools to evaluate and predict.

- Risk managers: Use ML algorithms to develop more robust risk measures more rapidly.

- Asset Managers: Perform due diligence on funds that employ ML/AI algorithms.

- Accountants: Applications of ML/AI to perform textual analysis of reports.

- Underwriters: Apply ML using bigdata to improve risk analysis in the insurance industry.

- Operations: Use ML/AI tools to reduce cost (operational alpha) while offering better customer service.
The FDP Program

To earn the FDP credential, candidates must complete

☑ **On-line prerequisite classes:** Foundations of mathematics and statistics and learn Python programming.

☑ **FDP Exam:** Big data, data mining, and machine learning applications in the financial industry.

Prerequisite classes

• Approx. 25 and 60 hours of online study

• **No Python** programming background is needed to start the prerequisite part

• The level of math and stats knowledge required to start the prerequisite programs is similar to the knowledge level of typical CAIA, CFA and FRM members
FDP Prerequisite

One of the following approved prerequisite paths must be completed

DataCamp

- 7 classes
- Independent study
- 25-60 hrs
- Start anytime
- As low as $30

DataQuest

- 8 classes
- Independent study
- 25-60 hrs
- Start anytime
- As low as $30

METIS

- 36 hrs in 12 sessions
- Course start every month
- Instructors available
- $750
FDP Exam

• 4 hour exam
• Multiple Choice (60%) & Essay type questions (40%)
• The exam is offered twice per year

<table>
<thead>
<tr>
<th>8 Topics</th>
<th>Approximate Weight %</th>
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<tbody>
<tr>
<td>1. Introduction to Data Science &amp; Big Data</td>
<td>5-10</td>
</tr>
<tr>
<td>2. Data Mining &amp; Machine Learning: Introduction</td>
<td>5-10</td>
</tr>
<tr>
<td>4. Data Mining &amp; Machine Learning: Classification &amp; Clustering</td>
<td>5-15</td>
</tr>
<tr>
<td>5. Data Mining &amp; Machine Learning: Performance Evaluation, Back testing &amp; False Discoveries</td>
<td>5-10</td>
</tr>
<tr>
<td>6. Data Mining &amp; Machine Learning: Representing &amp; Mining Text</td>
<td>5-10</td>
</tr>
<tr>
<td>7. Big Data, Data Mining &amp; Machine Learning: Ethical &amp; Privacy Issues</td>
<td>5-10</td>
</tr>
<tr>
<td>8. Big Data and Machine Learning in the Financial Industry</td>
<td>30-50</td>
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Your Go-To-Resources
Free to everyone

FDP HANDBOOK

FDP Institute Handbook
November 2019

FDP STUDY GUIDE

FDP Institute Study Guide
November 2019
FDP Curriculum & Study Tools

IPR E-Book
8 required readings
$99 Exam Registrants

Topics in Financial Data Science
12 required readings
Free Exam Registrants

Sample Questions
Study Tool
Free Exam Registrants

3 required books
- Data Science for Business
- Big Data and Machine Learning in Quantitative Investment
- An Introduction to Statistical Learning

Exam Registrants can look for best available price.
Topics, Learning Objectives & Keywords

The Study guide provides learning guide lines for each of the 8 topics.

**TOPIC 1**

**READINGS**

**READING 1**

**KEYWORDS**

**LEARNING OBJECTIVE 1**

Topics, Learning Objectives & Keywords

The Study guide provides learning guidelines for each of the 8 topics.

**TOPIC 1**
Introduction to Data Science & Big Data

**READING 1**
Data Science for Business Chapter 1 & 2

**LEARNING OBJECTIVE 1**

**KEYWORDS**

**LEARNING OBJECTIVE 2**

**READING 2**

**READING 3**

**READING 4**

**KEYWORDS**

- Data mining (p. 2)
- Churn (p. 4)
- Data engineering (p. 5, 7)
- Target (p. 24)
- Unsupervised data mining (p. 24)

- Data science (p. 4)
- Data-driven decision making (p. 5)
- Data-analytic thinking (p. 12)
- Label (p. 24)
- Supervised data mining (p. 25)

**Learning Objectives**
Demonstrate proficiency in the following areas:

1) Data analytic thinking (Ch. 1)
   For example:
   - Discuss the ubiquity of data opportunities.
   - Define data science, engineering, and data-driven decision making.
   - Explain data and data science capability as a strategic asset.
   - Describe data-analytic thinking.
   - Compare data science and the work of the data scientist.

2) Business problems and data science solutions (Ch. 2)
   For example:
   - Describe how one transitions from business problems to data mining tasks.
   - Compare supervised methods to unsupervised methods.
   - Describe the difference between data mining and using the results of data mining.
   - Describe key aspects of the data mining process, including business understanding, data understanding, data preparation, modeling, and evaluation.
Sample Questions

Sample 1
Consider a situation where 150 hedge funds must be classified. We have the following information for each fund: volatility, skewness, kurtosis, and Sharpe ratios. The goal is to determine the strategy of each fund using the above four features. Given this scenario, which type of learning model is best suited for this problem?

a) Unsupervised learning
b) Semi-supervised learning
c) Supervised learning

Answer: a
Source: LO 2.1.2, Reading 2.1, pp 2-28

Sample 2
Remy Orban has regressed the rate of return on a stock on the size factor and the value factor using a multiple regression model. He has monthly data for the last 10 years. If the residual sum of squares from the regression is 135.59 and the variance of the error terms is 0.85, which of the following value comes closest to the Akaike Information Criterion (AIC)?

\[
AIC = \frac{1}{n \hat{\sigma}^2} (RSS + 2d\hat{\sigma}^2)
\]

a) 1.24
b) 1.36
c) 1.48

Answer: b \((1/120 * 0.85 (135.59 + 2 * 2 * 0.85) = 1.36)\)
Source: LO 3.2.4, Reading 3.2, pp 210-213
Next Steps

- Create your FDP Profile
- Start completion of prerequisite classes
- REGISTER for the FDP Exam
  - Gain access to the curriculum material and study tools
  - Upload your certificates to your FDP Profile
- SCHEDULE* your seat for the FDP Exam (starting August 20th)
- Continue your studies
- Exam Day

Starting August 21st
Exam Window & Test Locations

Exam
• **November 11 – 23**
• 4-hour exam
  • 3 ½ hours for the test

<table>
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<tr>
<th>Item</th>
<th>Duration</th>
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<tbody>
<tr>
<td>Nondisclosure Agreement (must be completed within 5 minutes) *</td>
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<tr>
<td>Exam Instructions</td>
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<tr>
<td>FDP Multiple Choice Questions</td>
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<tr>
<td>Break (optional)</td>
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<tr>
<td>FDP Constructed Response Questions</td>
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<tr>
<td>Comment Period (optional)</td>
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<tr>
<td>Total Exam Session Time</td>
<td>4 hours</td>
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Test Locations
• Partnership with **Prometric**
• **Over 470** global test locations
• [www.fdpinstitute.org/exam](http://www.fdpinstitute.org/exam)
• Asia Pacific
• Europe
• Middle East
• Africa
• South America
• Americas
  • Canada
  • North America
  • Mexico

• Timeslots
  • Morning
  • Afternoon
  • (and in some cases) **Evening**
# Exams Registration & Fees

## November 2019

<table>
<thead>
<tr>
<th></th>
<th>Early Registration Deadline</th>
<th>Regular Registration Closes</th>
<th>FDP Exam Window</th>
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<tbody>
<tr>
<td>Registration Open</td>
<td>June 5, 2019</td>
<td>October 5, 2019</td>
<td>November 11 – 23, 2019</td>
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<tr>
<td>Early Registration</td>
<td>July 25, 2019</td>
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## April 2020

<table>
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<tr>
<td>Registration Open</td>
<td>October 15, 2019</td>
<td>March 5, 2020</td>
<td>April 2020</td>
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<tr>
<td>Early Registration</td>
<td>December 5, 2019</td>
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## Exam Fees*

<table>
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<tr>
<th></th>
<th>Early Registration</th>
<th>Standard Registration</th>
<th>Retake</th>
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<tbody>
<tr>
<td><strong>Registration Fee</strong></td>
<td>$950</td>
<td>$1150</td>
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<tr>
<td><strong>Enrollment Fee</strong></td>
<td>$400</td>
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<tr>
<td><strong>Total</strong></td>
<td>$1350</td>
<td>$1550</td>
<td>$450</td>
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* Exam fees do not include cost of reading materials

CAIA Members are eligible to a 20% discount on the Registration Fee
Frequently Asked Questions

• Can I Register for the Exam before I complete my prerequisite classes?
  • Yes you can!
  • You can work on your online technical skill understanding as you study for the exam

• When is the exam window and where can I take it?
  • November 11-23
  • Check the exam page on our website

• When can I Schedule My Exam Seat?
  • August 21st, 2019
    • Prerequisite classes have to be completed
    • Certificates have to be uploaded to your FDP profile and verified by FDP staff

• I am studying for the CAIA Level II Exam, am I eligible for the CAIA Discount?
  • Unfortunately no. Only CAIA members are eligible for the discount
    • [https://caia.org/content/applying-caia-membership](https://caia.org/content/applying-caia-membership)
Registration for November is Open

http://fdpинstitute.org/exam-registration

Contact us: info@fdpинstitute.org

@fdpинstitute

www.linkedin/company/fdpинstitute
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