# Masters of Professional Studies in Analytics

**"To fulfill my goal of becoming a global solution provider"**

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Northeastern University

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## My approach & Understanding

**To be CLEAR… Self Introduction (Personal)**

✓ **Understand how to collaborate and share things with each other than staying in individual happiness Experience the level of creativity allowed in Canada, I had a dream of going abroad, on a bigger stage**



✓ Have been grateful and satisfied with all the things given to me - a stable family, faith and love, and financial leisure that does not overflow. If I hadn't practiced sharing, such as IT Volunteer work in Ecuador and supporting students in Zimbabwe, I might have lived a very personal life. However, through such a precious experience, I hoped for a shared future rather than staying in individual happiness.

✓ When I was in Canada, I saw firsthand the degree of diversity accepted and appreciated in Canada and the level of creativity allowed. I was moved by the possibilities that an open society can bring to its members. Since then, I had a dream of going abroad, on a bigger stage. To this end, I made endless efforts, such as a Master degree program and studying English, and came to Oracle, which would become a stepping stone to my future dream. At Oracle, I had a lot of experience, such as carrying out overseas projects with global experts.

✓ Now is the time to take the next step toward my dream. My next destination is Northeastern University, and I want to work at a global tech company for 3 years, understand the flow of the US and global markets, and start my own business in 5 years.
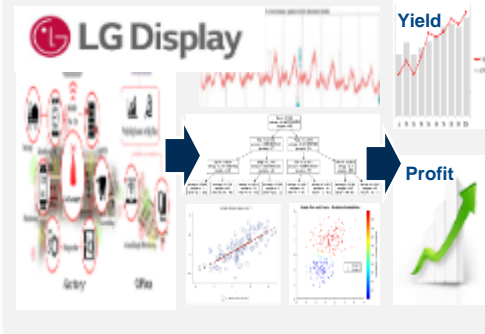
## To be CLEAR… Self Introduction (Professional)

✓ **Ready to share my experiences in the field of data science, and be confident to create synergy in research activities and collaborate with colleagues at Northeastern University, College of Professional Studies**

### My expertise in Data Science field and my enthusiasm for learning

| • Data Scientist (LG Display) ('13.01~'19.05) | • KAIST Master of Science in Information Management ('16.09~'19.01) | • AI/ML & Data platform Consultant (Oracle) ('19.05~present) | • Enthusiasm for learning (~Continuous) |
|---|---|---|---|

" Provide business value by analyzing data and developing models so as to excavate insights for the front-line employees "
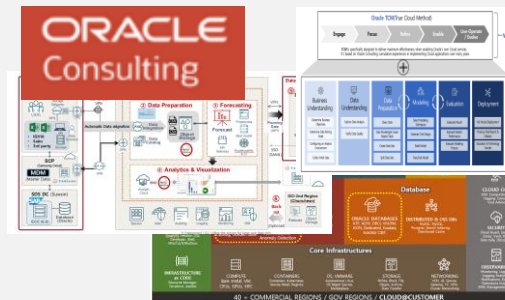
" An interdisciplinary program that combines data analysis, strategy, and management (Lectures: Business Analytics, Big data Analysis, App development, IT system Design, IT business Management) "

" Provide consulting services to design data architecture and develop AI/ML & Data platform to build data-driven enterprise "

" Externally activities to improve my technical knowledge in Data Science and academic subjects"



**Column 1:**

• **Implement multiple ML/data analysis projects**
→ Develop an anomaly detection and monitoring system with ANN algorism, enabling early error detection of pixel deposition facilities. (Reduced annual defect rate by 0.2%)
▶ Python, SAS(JMP), Spotfire, Matlab, Excel,

**Column 2:**

• **Research:** Expected Values on the Continuous Intention to Use IoT Products from the Perspective of Expectation-Confirmation Theory (user, survey data)
• **Data analysis & ML Projects** with startup companies (Recommendation system, churn &conversion rate, target marketing, and log data analysis)
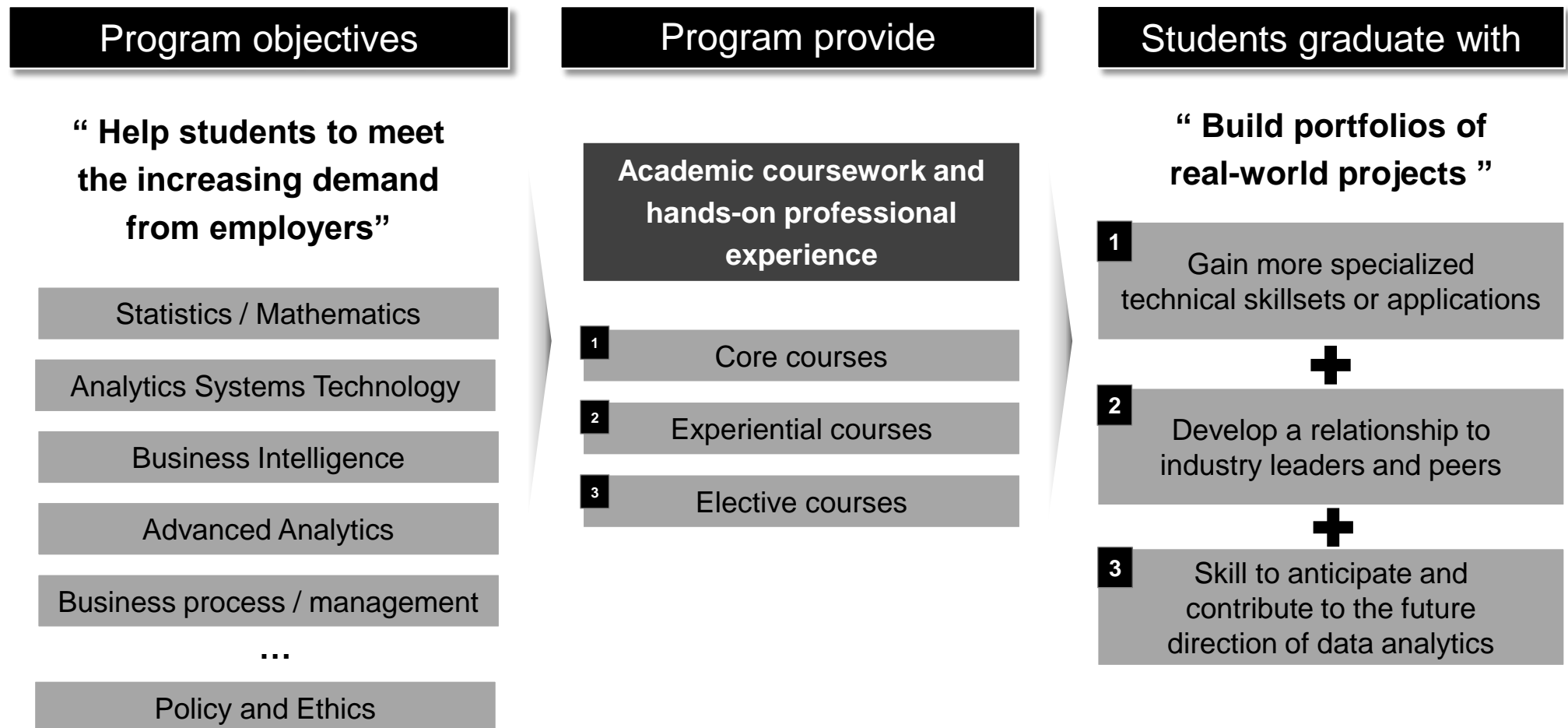▶ Python, SPSS, Smart PLS, MySQL OracleDB

**Column 3:**

• **Implemented multiple AI/ML & data platform projects** (Industry: pharmaceutical, distribution, manufacturing, insurance, banking)
• **Engage in proof-of-concept work or product demonstration** for clients to deliver data strategy and insight based on clients' requirements.
▶ Python, Oracle solution (OML, OAC, Data Science, AI Service)

**Column 4:**

• **External efforts:**
**Oracle professional training** (Analytics, Database, Cloud Infrastructure, Architecture)
**Courses** (Linear Algebra, Multivariate Calculus, Statistical Inference, Randomized Algorithms, Data Structure)
**Conference & Volunteer work** (KORMS conference, NVIDIA GTC 2018, IT Education volunteer(Ecuador))

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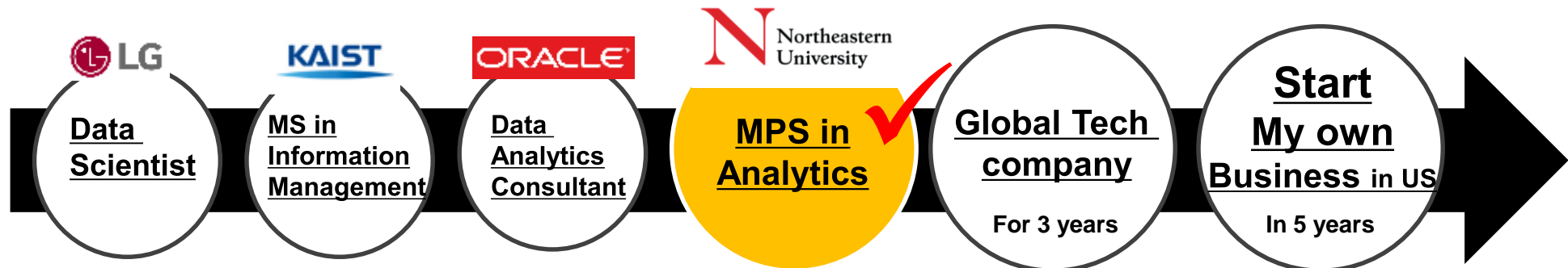**To be CLEAR… My understanding of MPS in Analytics at Northeastern University**

✓ **Masters of Professional Studies in Analytics help students to meet the increasing demand from employers through rigorous academic coursework and hands-on professional experience in the area of their interest**

**Northeastern's MPS in Analytics program overview**

| Program objectives | Program provide | Students graduate with |
|---|---|---|
| " Help students to meet the increasing demand from employers" | Academic coursework and hands-on professional experience | " Build portfolios of real-world projects " |

**Program objectives**

" Help students to meet the increasing demand from employers"

- Statistics / Mathematics
- Analytics Systems Technology
- Business Intelligence
- Advanced Analytics
- Business process / management
- …
- Policy and Ethics

**Program provide**

Academic coursework and hands-on professional experience

1. Core courses
2. Experiential courses
3. Elective courses

**Students graduate with**

" Build portfolios of real-world projects "

1. Gain more specialized technical skillsets or applications

➕

2. Develop a relationship to industry leaders and peers

➕

3. Skill to anticipate and contribute to the future direction of data analytics

**To be CLEAR… Why Northeastern's MPS in Analytics ? (My Progress)**

✓ **Having master's degree from Northeastern which is the best Analytics program across the globe is a prerequisite for my future objective to start my own business**



Data Scientist → MS in Information Management → Data Analytics Consultant → MPS in Analytics ✓ → Global Tech company (For 3 years) → **Start** My own **Business** in US (In 5 years)

✓ In 2019, I decided to pursue my journey at Oracle in order to aid in preliminary work for companies in a variety of industries seeking to start data transformation. Oracle allows me to develop into a better-equipped analyst and entrepreneur. I'm able to understand different market demands by facing unmet needs by serving consulting services to multiple clients in a diversity of industries. I plan to develop my own solution for the existing numerous Small and Midsize Businesses (SMB) each with its unique set of needs. With the lessons from my career and degree program, I aspire to develop AI and ML-based solution packages that will help SMBs in their operations across the world.

✓ Having a master's degree from Northeastern which is the best Analytics program across the globe is a prerequisite for my future objective to start my own business. I will make my partners and, expand my technical and theoretical knowledge. Also, I will have time to quench my thirst by reading and understanding various research papers and finding things that can be applied. Moreover, I will conduct a capstone project within my interest to deepen my knowledge. I'm certain that I will be able to accomplish my goals and create meaningful results by partaking in the MPS in Analytics program at Northeastern University.

**To be CLEAR… My course schedule at Northeastern University**

✓ **Quench my thirst through the core and elective courses (In particular ★) to fulfill my future objective Plan to take 4 semesters (45 credits): Core 18 credits, experiential 6 credits, and elective 21 credits**

| | Year 1 | | Year 2 | | Curriculum | |
|---|---|---|---|---|---|---|
| Calendar | Fall | Spring | Fall | Spring | Electives Courses | **Electives 21 credits** |
| Credits | 12 credits | 12 credits | 12 credits | 9 credits | | |
| 1 | ALY 6000: Introduction to Analytics | ALY 6070: Communication and Visualization for Data Analytics | ALY 6110:★ Data Management and Big Data | EAI 6000: ★ Fundamentals of Artificial Intelligence | | ⬆ |
| 2 | ALY 6010:★ Probability Theory and Introductory Statistics | ITC 6000: ★ Database Management Systems | ALY 6140★ Analytics Systems Technology | ITC 6020: Information Systems Design and Development | Experiential courses | **Learning & Capstone 6 credits** |
| 3 | ALY 6015: Intermediate Analytics | ALY 6030: Data Warehousing and SQL | ALY 6080: Integrated Experiential Learning | ALY 6980: Capstone | | ⬆ |
| 4 | ALY 6050: Introduction to Enterprise Analytics | ALY 6020: Predictive Analytics ★ | EAI 6010: ★ Applications of Artificial Intelligence | | Core Courses | **Core courses 18 credits** |
| | | | | | Total | **45 credits** |

★ Important courses for me to enhance my knowledge are needed

※ Graduate Requirement: 45 credits

**To be CLEAR… My area of interest**

✓ **Would like to work on developing methods to promote the use of machine learning, especially with regard to social & behavioral data analysis, recommendation systems, and supporting decision-making**

## My interest in Data Science

✓ Recommendation model

✓ Time-series analysis

✓ Sales & demand forecasting

✓ Customer segmentation

✓ Anomaly detection

✓ Customer satisfaction prediction

✓ Social media analysis

## Deepen my knowledge at Northeastern

✓ Explainable recommendation

✓ Graph-based recommendation

✓ Sentiment-based recommendation

✓ Media (cartoon, music, book) recommendation

✓ Fake review detection

✓ Development of driver factors
(Find out factors affecting market demand and sales)

✓ Continuous decision-making under uncertainty

✓ Customer Personalization Service

✓ Forecasting for new launching products
(Without historical data)

✓ Define the patterns using social data

## To be CLEAR… Why Northeastern's MPS in Analytics ? (My direction of study)

✓ **Deeply impressed by Uwe and Xiaomu's work, I would like to earn advice to develop a forecasting strategy when products enter new markets and define recommendation methods without privacy infringement**

| Description | | Based On Experiences | Desire to work with faculty at Northeastern |
|---|---|---|---|

**Description**

### Based On Experiences

**LG Display**
Data Scientist

**" Sharpened my skillset in Data Science filed "**
- Validate factors by using statistical methods
- **Development of prediction models and monitoring systems**
- Opportunities to analyze big data

**KAIST**
MS in Information Management

**" Broaden my standpoints in Data Science filed "**
- **Work with various industry startup companies**
- **Experience multiple types of data, recommendation system**
- **Publish research paper (User expectation, continuous use)**
- Understand Data-driven strategy

**Oracle**
AI/ML Data platform consultant

**"Apply to real cases & Experience end-to-end service"**
- Provide data management strategy for clients
- **Implement AI/ML, data platform consulting projects (Market Basket Analysis, forecasting system, etc.)**
- Understand architecture with Oracle's strong data product lineup

**External efforts**
course, training

**" Enhance academic & technical knowledge "**
- **Attend several mathematical and data coursework**
- Take professional training courses and earn certificates
- Attend academic & Global AI conference

### Desire to work with faculty at Northeastern

**Uwe Hohgrawe**

**Analytics professional in pharmaceutical markets**

→ Develop key factors that are an important role in the market demand and product sales (e.g. market share, the penetration rate)

→ Develop forecasting strategy for product sales entering new markets in complex market dynamics

**Xiaomu Zhou**

**Research on Social Informatics and Human Information Behaviors**

→ Improve performance of recommendation and personalization system without privacy infringement considering architecture and user interface

→ Study a practical friend recommendation method, that preserves the privacy of users' friends lists

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