

# MS in Data Science program

**“To fulfill my goal of becoming  
a global solution provider”**

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Prepared for  
The George Washington University



## **My approach & Understanding**

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6. My research and area of interest
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## 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 George Washington, 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.



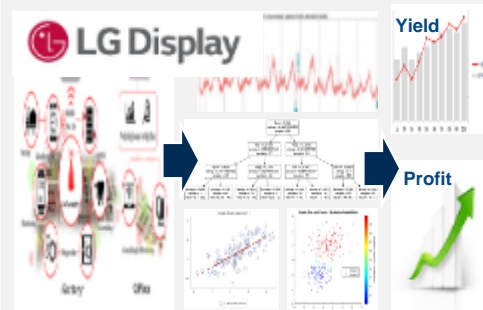
## To be CLEAR... Self Introduction (Professional)

- ✓ 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 the George Washington University

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

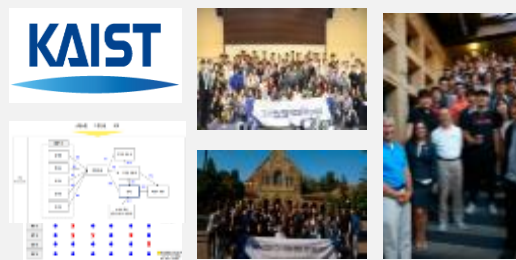
- Data Scientist (LG Display) ('13.01~'19.05)

“ Provide business value by analyzing data and developing models so as to excavate insights for the front-line employees ”



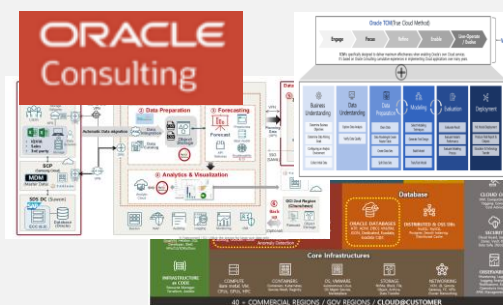
- KAIST Master of Science in Information Management ('16.09~'19.01)

“ An interdisciplinary program that combines data analysis, strategy, and management (Lectures: Business Analytics, Big data Analysis, App development, IT system Design, IT business Management) ”



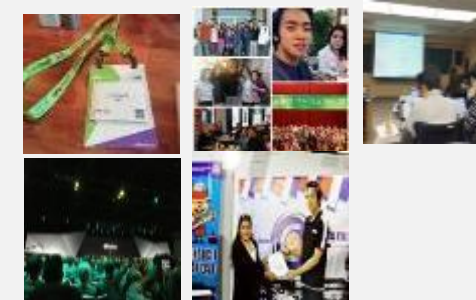
- AI/ML & Data platform Consultant (Oracle) ('19.05~present)

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



- Enthusiasm for learning (~Continuous)

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



- Implement multiple ML/data analysis projects

→ Develop an anomaly detection and monitoring system with ANN algorithm, enabling early error detection of pixel deposition facilities. (Reduced annual defect rate by 0.2%)

► Python, SAS(JMP), Spotfire, Matlab,



- 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

- 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.

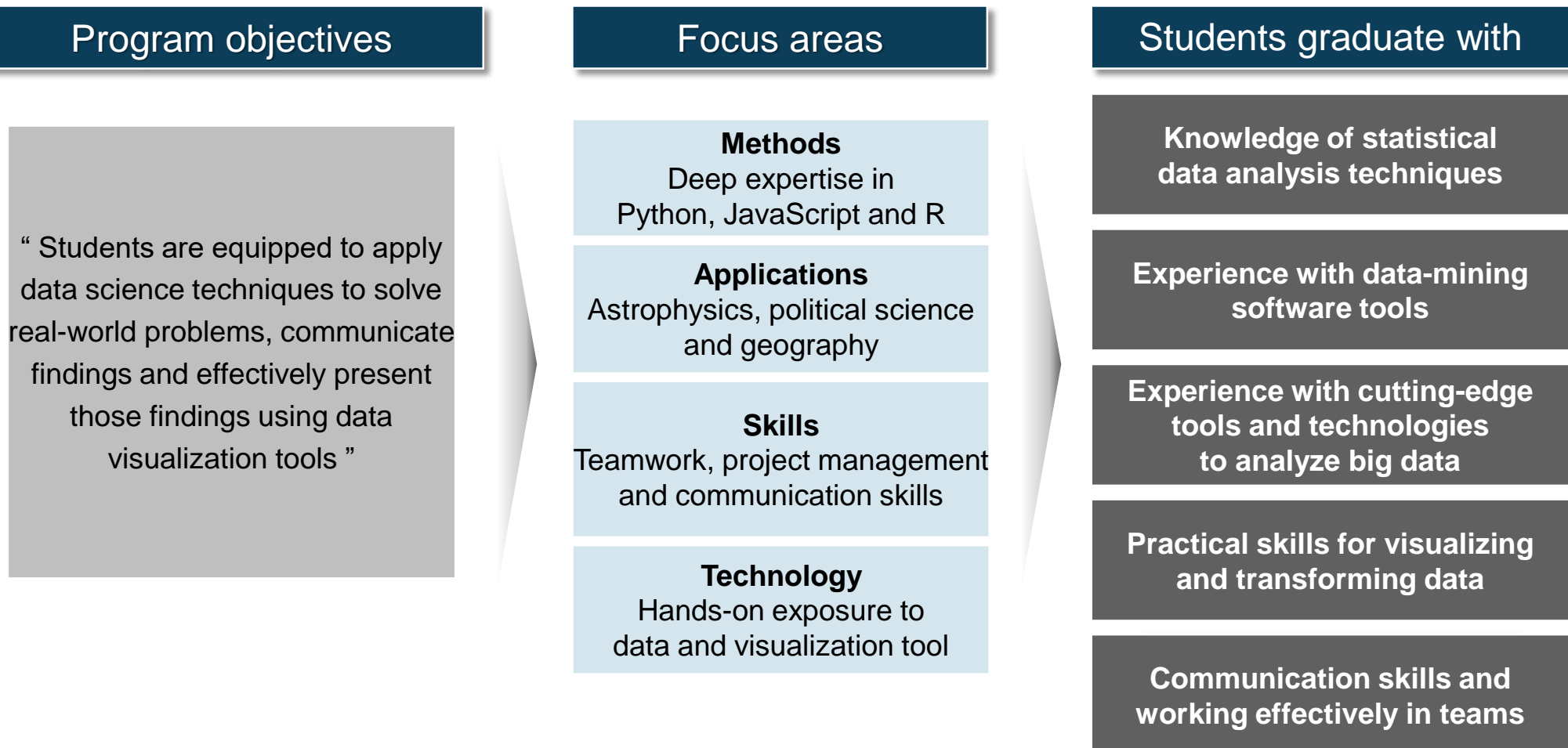
► Python, Oracle solution (OML, OAC, Data Science, AI Service)

- 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))<sup>4</sup>

## To be CLEAR... My understanding of MS in Data Science program at George Washington

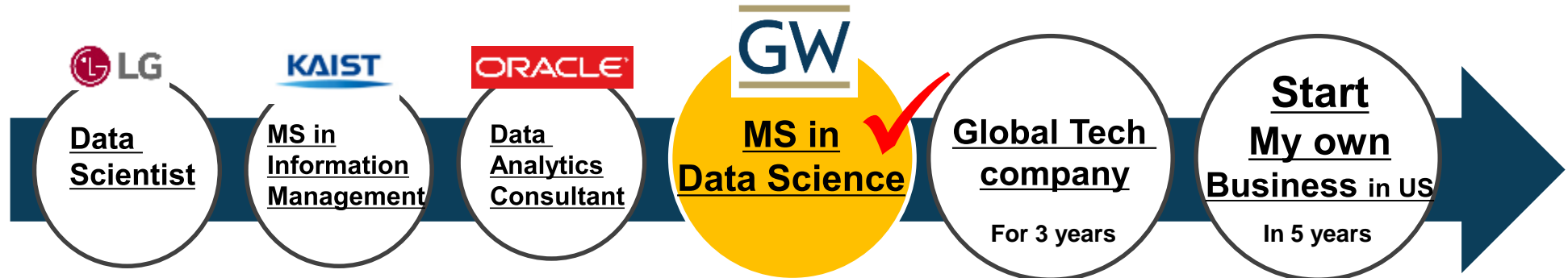
- ✓ **MS in Data Science program focuses on the effective use of a vast array of information drawn from the natural and social sciences, and the program offers a rich, hands-on experience.**

### George Washington's MS in Data Science Program overview



## To be CLEAR... Why George Washington's MS in Data Science program ? (My Progress)

- ✓ Having master's degree in George Washington which is the best Data Science program across the globe is prerequisite for my future objective to start my own business



- ✓ 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 George Washington University which is the best Data Science 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 research 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 MS in Data Science program at the George Washington University.

To be CLEAR... My course schedule at George Washington

✓ **Quench my thirst through required and elective coursework (In particular★) to fulfill my future objective**  
**Plan to take 4 semesters (30 credits): Required (18) and electives (12)**

	Year 1		Year 2	
Calendar	Semester 1	Semester 2	Semester 3	Semester 4
Credit	9 credits	9 credits	6 credits	6 Credit
1	DATS 6101: Introduction to Data Science	DATS 6202: ★ Machine Learning I: Algorithm Analysis	DATS 6303: ★ Deep Learning	DATS 6313: Time Series Analysis and Modeling
2	DATS 6102: Data Warehousing	DATS 6312: ★ Natural Language Processing for Data Science	DATS 6203: ★ Machine Learning II: Data Analysis	DATS 6501: ★ Data Science Capstone
3	DATS 6103: Introduction to Data Mining	DATS 6401: Visualization of Complex Data		
4				

★ Important courses for me to enhance my knowledge are needed

Curriculum	
Capstone	Capstone project: Professor Divya Narula & Anya Mendenhall
	↑
Elective courses	Elective courses 4 courses
	↑
Required courses	Required courses 6 courses
Total	30 credits

※ Graduate Requirement: 30credits

## 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 the recommendation system, customer behavior analysis, and sales & demand forecasting**

### My interest in Data Science

- ✓ **Recommendation model**
- ✓ Time-series analysis
- ✓ **Sales & demand forecasting**
- ✓ Customer segmentation
- ✓ Anomaly detection
- ✓ Customer satisfaction prediction
- ✓ Social media analysis



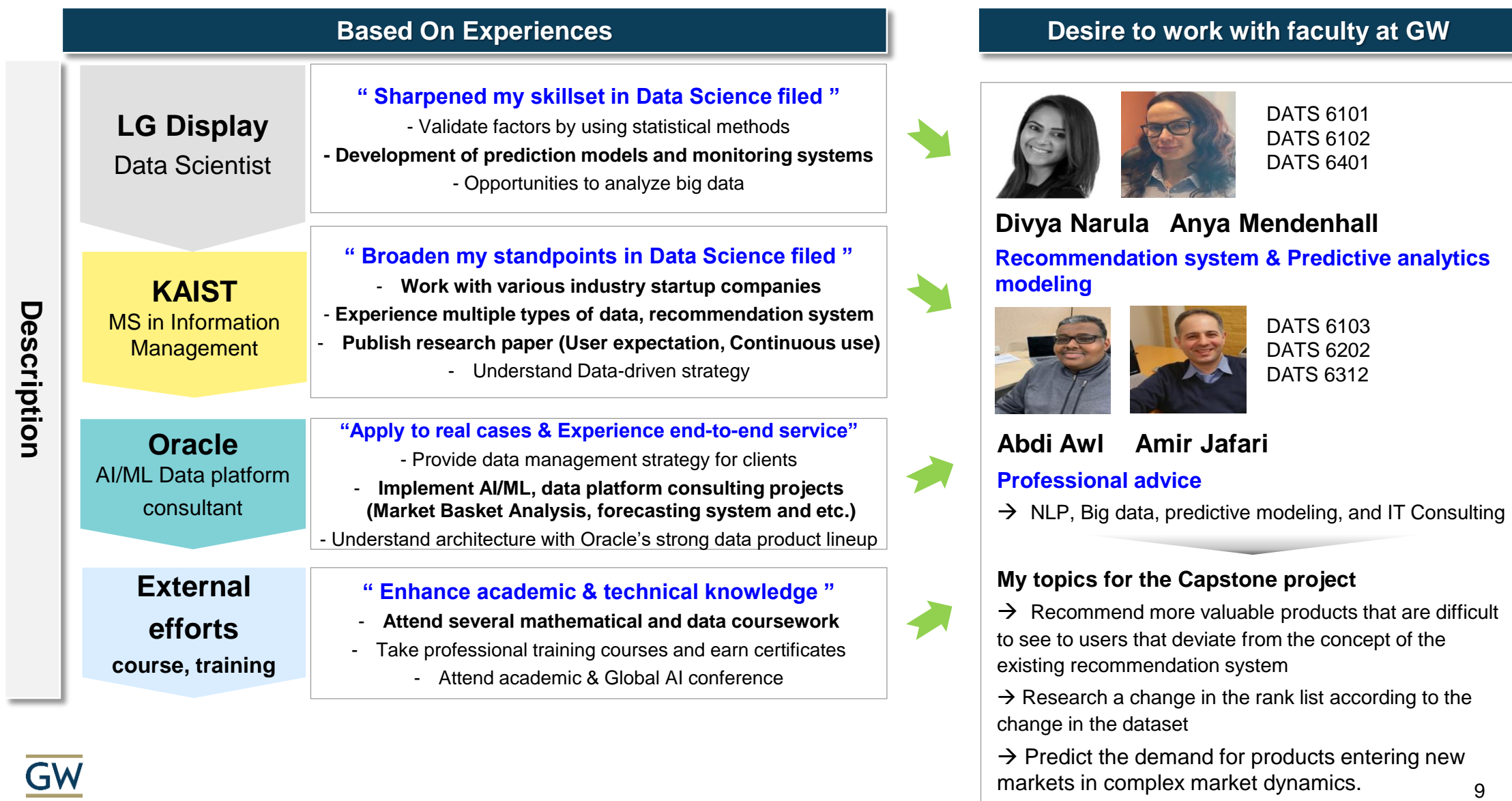
### Deepen my knowledge at George Washington

- ✓ Explainable recommendation
- ✓ Graph-based recommendation
- ✓ Sentiment-based recommendation
- ✓ Media (cartoon, music, book) recommendation
- ✓ Fake review detection
- ✓ High-dimensional Time-series analysis
- ✓ Forecasting for new launching products (Without historical data)
- ✓ Development of driver factors (Find out factors affecting the model's performance)
- ✓ Continuous decision-making under uncertainty



## To be CLEAR... Why George Washington's MS in Data Science program ? (My direction of study)

- ✓ I would like to earn advice from Divya and Anya on defining the new concepts of recommendation models and predicting the demand for products entering new markets in complex market dynamics



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