

# IS6611: Applied Research in Business Analytics



# UCC

**University College Cork, Ireland**  
Coláiste na hOllscoile Corcaigh

**INDIVIDUAL REFLECTION**

121104673

Nikhil Mohan Joshi

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## The Journey

I was always fascinated about football and always used to find some way to incorporate football with my field of study. In my previous Bachelor's and Master's degree in India, I worked upon creating a website related to Football. My Bachelor's project was about developing a basic website portal for a football academy which can be used by their members and players to get to know their schedules, updates, notices, etc. It was a standalone website model without incorporating analytics in it. Just a plain, simple website displaying the football academy's details and day-to-day updates. My Master's project was an upgrade to what I did in my Bachelor's project. Initially I thought about building something and upgrading my previous Bachelor's project, but the topic of my Bachelor's project somehow had some major restrictions from analytics point of view. So, I decided to build a website which could be seen as a product/tool which can be used by football statisticians or for users who are just interested in the subject of football statistics. As I was made aware of science behind using the available data, I was excited to finally use it in some form for my project. My knowledge regarding the analytics' using data was at a very beginner level, therefore I just used the data available from the free source internet and used RStudio to refine and clean the data and further plot graphs and other inferences and concluded with a comparison between two different teams playing in the same league. It was just a generic display of summarizing comparisons using football data. Also, I made use of the ranking function/algorithm available in R, and based on the stats of previous 3 season, predicted the ranking of teams in a league for the next season. It was my first prediction model and with that my first analytics project.

Then after graduation, I started my professional career and started working as a Functional Business Analyst. In my role, I didn't had any kind of exposure with data and analytics part. I tried to keep touch of it, but it just continued to slip away. Still enthusiast with data and analytics and also now starting to gain an interest in my job role as a Functional Business Analyst, I saw an advert of an agency which helps students with the relocation and help students with their Visa processes abroad in universities.

I did my research in this, and I was very delighted that I found a course in UCC, which catered to both data analytics as well as Business Analytics part together. With no further hesitation, I aimed to start with the course.

## Living the Dream

It wasn't a dream actually but you can say a fascination for me to study abroad. I was admitted to UCC, Ireland. I was finally in Ireland about to start with the course. Luckily for me things were getting back to normalcy after global pandemic and my batch was fortunate enough to have our lectures and other college activities in-person with all the staff and faculties of university. This gave a big morale boost for me early in the 1st Semester. To be honest, I found the 1st semester a bit heavier and more loaded with both the critical analytical subjects at once which were IS6052: Descriptive and Predictive Analytics and IS6055: Prescriptive Analytics where were taught by Prof. Dr. Armagan Tarim. These two subjects had so many learning outcomes and were made really interesting by the Professor, but I struggled with it quite a lot initially and then picked up with the assignments and tutorials quite a well. It again helped me deep dive with all the analytics and data.

Also subjects like IS6025: Design Thinking for Business Analysis and IS6061: Programming for Data and Business Analytics by Prof. Dr. Andrew Pope and Prof. Silvia Conrado, helped me with the idea behind designing a system according to client's need and use of Python for coding and developing

the system.

In 2nd Semester, we were introduced to IS6060: Cloud Technologies in which I was newly introduced to cloud architecture and computing. It was a bit difficult for me to cope with it initially, but later with the help of assignments and gradual understanding, I was able to grasp with AWS Technologies. IS6053: Decision Making and IS6026: Business Analyst Skills were the two modules in which I was very comfortable from start as they were closely related to my previous experience and I could easily understand and relate teachings with my past experiences. It was an excellent brush up to my past knowledge. Further, IS6051: Business Data Visualisation module taught me a very useful tool which is also used on an extensive scale in the industry which is Tableau. I was able to articulate the data derived and create dashboards and visualisation through which I could summarize the data.

Using all the learnings from the modules taught to us in both the Semester, I thought it would be great for me if I try and build more on my previous topic of projects in Bachelor's and Master's and try to incorporate new learnings like Cloud Technologies, Descriptive and Perspective Analysis, Design Thinking and Data Visualisation and to refurbish my project idea in an advance way.

I remember during Dr Tarim's lecture he once had referred to concept of TensorFlow library. I was quite fascinated by the concept with which you can carry out object detection in photos, videos and even in real-time. From there I picked up the idea and asked what analysis can be done if I manage to detect an object (which would be a football) in an ongoing match (real-time scenario) and that's when I thought I might have an legit idea for my final project to implement.

I put forward my Project Idea - "Analysis of Passing Networks" - which will analyse the reaction of a team on the basis of their passing patterns when the team are leading, trailing, drawing a game.

## Difficulties & Learnings

Accordingly, groups were formed on the basis of similarity of topics selected by every student in the class. I was put into a Football group with 5 other students who had topic related to football analytics.

Even though I had worked in a team in an organization earlier, this was the first time I was a part of group project in my educational career.

My Group had Aadith, Philson, Tom, Conor, Yash and myself. As our groups were formed, we had a brief introduction of ourselves and shared the individual project ideas within the group. We had given ourself a good gap of a week or two to go through and analyse everyone's project, after which we had a brain-storming session where every single project idea was taken out and its positives and negatives were discussed. Finally, after a long session, we as a group had arrived to point of selection of Aadith Project idea with a little tweak to incorporate passing networks in it, the main reason for this was Aadith's project idea involved almost everyone's idea but he had kept it in very short manner, which we thought was a consolidated solution. Thus, we had finalized the topic of our final group project.

*This taught me that although implementation individual ideas are commendable but incorporation of different idea together to achieve one big cloud of consolidated idea is much deservedly appreciated.*

The team building session of our group kick-started very well, using 6 Thinking Hats Technique, we all acquired our hats for the projects, assigning specific roles for everyone to play out throughout the course of our project. There was a suggestion that as this is our group project, every person even though it's not his role, should try to incorporate qualities and try wearing all the hats if possible, so that everyone can get a broader perspective of the project from every angle. I would say this helped our group in a far better way than expected because everyone was now well versed with what actually the project scope and process would be. There was a sense of clarity between every group member.

*This taught me that one should not always think from only one perspective and conclude the understanding, but rather in a group, collective perspective plays out to much better possibility of success.*

Then we started with the implementation part, during that phase I personally wanted to contribute to the back-end which is analysis part of the topic, which includes having your hands on data and making conclusive analysis of data using Python libraries. But Philson and Aadith also expressed their fond for analysis. We kept that part at the back of our minds and went forward with other segments. We had Yash who had an interest in developing the front-end of the system as he had extensively worked in that field earlier as well. Tom and Conor went with business and financial segment as they had some background in those fields respectively. For Yash managing the whole front-end alone was somewhat tiresome, so we decided one from the back-end/analysis team which were Aadith, Philson and myself would switch their role and help Yash with the front-end development. We 3 had a brief discussion, I was very eager to have gotten this opportunity to work on analysis part, but then it was evident that Aadith and Philson had much more proven knowledge about data analytics, as they were highly experienced in this field from their past working organization. But, whilst contributing to front-end, I didn't let myself away from the analytics part, as i constantly had an update with Aadith and Philson about the technologies they are using and was completely aware of all the programming and algorithms implemented in the project. I myself also made some test runs of the algorithms to better understand the outcomes.

*This taught me that, although I had to back out from working on the data analytics part in which i was very eager to work on, you have to give up something you want to do to achieve positive progress of overall group.*

Initially, me and Yash decided to make use of React library to code our front-end of the system, as Yash was well versed with coding language, I struggled very much. Yash kept on sending me YouTube tutorials for reference. As we were moving forward steadily with the technology and learning it gradually, there came a major roadblock, as in a weekly group meeting, we came to know that, some back-end solutions of our projects weren't compatible with the front-end technology that we were using until now, which can lead to dropping of some features from our project scope. As we didn't want to out some major features out of scope from our project, we decided to implement the front-end with different approach. As back-end was done in Python and R, we thought what if we code the front-end using RStudio's framework as this would solve the compatibility issue. We then started programming the front-end in R and was able to achieve the goal quite easily without facing any more problems.

*This taught me that there are some stages in a project where you have to change your whole mindset which you have been applying from the start and are forced to make use of different approach and if these kinds of scenarios are handled patiently and with a thought combined with teamwork, you can still achieve same level of success.*

In the final stages of project, it was quite a difficult task for me to be a part of financial presentation, as I barely had any knowledge of financials and sales jargons. It took immense effort of reading and going through project financials examples and even podcast, until I was somewhat aware of the financial grammar.

*This taught me that, it requires a lot of dedication and research to learn about something new when you're up against time as well as knowledge.*

## Road Ahead

Finally after all the efforts our group collectively had put forward, we managed to ease through our technical as well as financial presentations and had our project in perfectly working condition as well as were on spot with the figures out forward which predicted our growth and structure of the project in a corporate world.

With all the ups and downs experienced personally as well as being in a group together has definitely helped me achieve my goal of coming to Ireland and pursuing master's degree in BIAS - achieving extensive knowledge in data analytics and able to grow and develop my knowledge as a Business Analyst.

Further, although I have decided to carry forward my career as a Business Analyst professionally, I have learned to not let go of data analytics stream and to be more patient, calm and to keep going on with an effort to increase and update my knowledge of analytics.

Having learned some invaluable ethics and leaving with a sense of consolidation of everything I have learned in past year be it from educational point of view or personally, I will strive towards achieving my goals fairly in both the Business world and in Analytics future.