



BAIT 580D – Microsoft FarmBeats Project (1.5 credits)

UBC Sauder’s Robert H. Lee Graduate School is excited to announce a partnership with Microsoft regarding the FarmBeats for Students (FBFS) program.

As part of this partnership, UBC MBA students will have the opportunity to enroll in the **Directed Studies** BAIT 580D Microsoft FarmBeats Project course (1.5 credits) during the upcoming FT MBA Period 7. Through the course, students will work to create a business case and go-to-market strategy for the FarmBeats for Students program.

It is important to note that this course will not have a set meeting schedule but instead students will schedule periodical meetings with the course instructor and Microsoft Executives to discuss their progress and make adjustments as needed.

Lastly, this course is by application only.

Once admitted to the course, students will be required to self-select their own teams and submit their project proposal and timeline to the course instructor, based on the information provided below.

Context / Background

Several studies have demonstrated the need to significantly increase the world’s food production by 2050. However, there is limited amount of additional arable land, and water levels have also been receding. Although technology could help the farmer, its adoption is limited because the farms usually do not have power, or Internet connectivity, and the farmers are typically not technology savvy. Microsoft is working on the commercial ‘Azure FarmBeats’ product to bring AI, Edge and IoT in agriculture and build an end-to-end approach, from sensors to the cloud with a goal to enable data-driven farming. However, getting data from the farm is extremely difficult since there is often no power in the field, or Internet in

the farms. As part of the Azure FarmBeats project, Microsoft is building several unique solutions to solve these problems using low-cost sensors, drones, and vision and machine learning algorithms.

Here are a couple resources related to the Azure FarmBeats project that was announced last year and is currently in private preview:

- **FarmBeats** (old site but has interesting publications/videos)
- **Azure FarmBeats** (current site)

Current Opportunity

While there is amazing work happening on the commercial agriculture side, Microsoft wants to bring AI, ML and data science into the classroom in context of food and agriculture to all learners globally. They have been working on the FarmBeats for Students program (FBFS) which is a joint initiative between Microsoft Education and Azure Edge Devices (AED) teams.

FarmBeats for Students (FBFS) is a hardware, software and curricular experience designed to empower every learner to acquire the fundamentals of Artificial Intelligence, Machine Learning and Data Science in the context of food production practices. By applying a combination of hands-on and digital skills, students learn about AI in the context of looking at how it can solve a real-world problem, global hunger. They grow plants, use sensors to measure and collect data, engage with the world of IOT and machine learning to gather insights about their crops. In addition, they explore agents and leverage automation to maintain optimal growing conditions. The academic experience is aligned to the NGSS, CSTA and AFNR standards, and has been designed to be delivered as activities done either in the classroom or at home.

The target demographic includes but is not limited to high school and higher education students studying Agriculture, Computer Science, Data Science and Environmental science.

The key customer in the first phase is Future Farmers of America (FFA) with 700k students, 13k teachers and 8k chapters across USA. While engaging in the FarmBeats for students program, students will grow a plant/crop in a cup/pot/plot in their school or at home and during the process use sensors and IoT to gather data and gain insights, use machine vision and leverage automation to learn more about the health of their plant/crop.

Project Scope

Help build a business case and go to market strategy for FarmBeats for students program.

1. Research
 - Emerging AI4k12 standards and need for materials to bring AI into the classroom.
 - Global opportunity to modernize learning and bring AI, ML and Data science standards
2. SWOT Analysis
3. Competitive Landscape
4. Price sensitivity analysis for the price of a FBFS Kit (for K-12 and Higher Education)

5. Opportunity analysis with total addressable market and approach to phased global footprint
6. Go to market for plan for Microsoft (Microsoft would like to launch the plan in January 2021)

Deliverables (December 2020)

1. A final report with executive summary and supporting materials
2. A final presentation to appropriate stakeholders at Microsoft

Course Instructor

Dr. Darren Dahl is the Senior Associate Dean – Special Projects (Covid Response) and the Innovate BC Professor at the University of British Columbia. Ranked by the American Marketing Association as the second leading marketing researcher in the world, Professor Dahl brings to life his expertise in new product design and development, creativity, consumer product adoption, the role of social influence in consumer behavior, and understanding the role of self-conscious emotions in consumption.

Professor Dahl teaches courses in Creativity and Strategic Analysis at the undergraduate, MBA, and executive education levels. He has consulted and organized education programs for a number of non-profit and for-profit organizations such as Cathay Pacific, Procter & Gamble, Xerox, General Electric, YVR, Vancouver Public Health, Teekay Shipping, Hagensborg Foods, Lululemon Athletica, Earls Restaurants, BCLC, Agent Provocateur, Daehong Advertising – Korea, and LIC India.

Professor Dahl received his Ph.D. from the University of British Columbia.

Application Process

Application deadline: Monday October 26th, 2020

Click [here](#) for more information about the application process and timeline as well as to submit your application.

Note: Enrolment in this course is limited to 20 students.

Any questions should be directed to askmba@sauder.ubc.ca