Data Science Major

Meet your Major event!

Monday March 3rd, 2025

Exciting Update!

Updated: February 25, 2025

Welcome to the DSCI Major page, we're very glad you're interested in this new major program!

Important News: On February 19, the Data Science Major program was approved by the UBC Senate. The final step in the approval process is with the Ministry of BC, and we expect to receive their approval soon. We are happy to announce the new DSCI Major program will be accepting students in September 2025. We will soon update this website to include more information about this new major program - thank you for your patience while we get things ready!

What is Data Science?

Data science is the process of **generating insight** from data through **reproducible** and **transparent** processes.

Problems Data Science can solve...
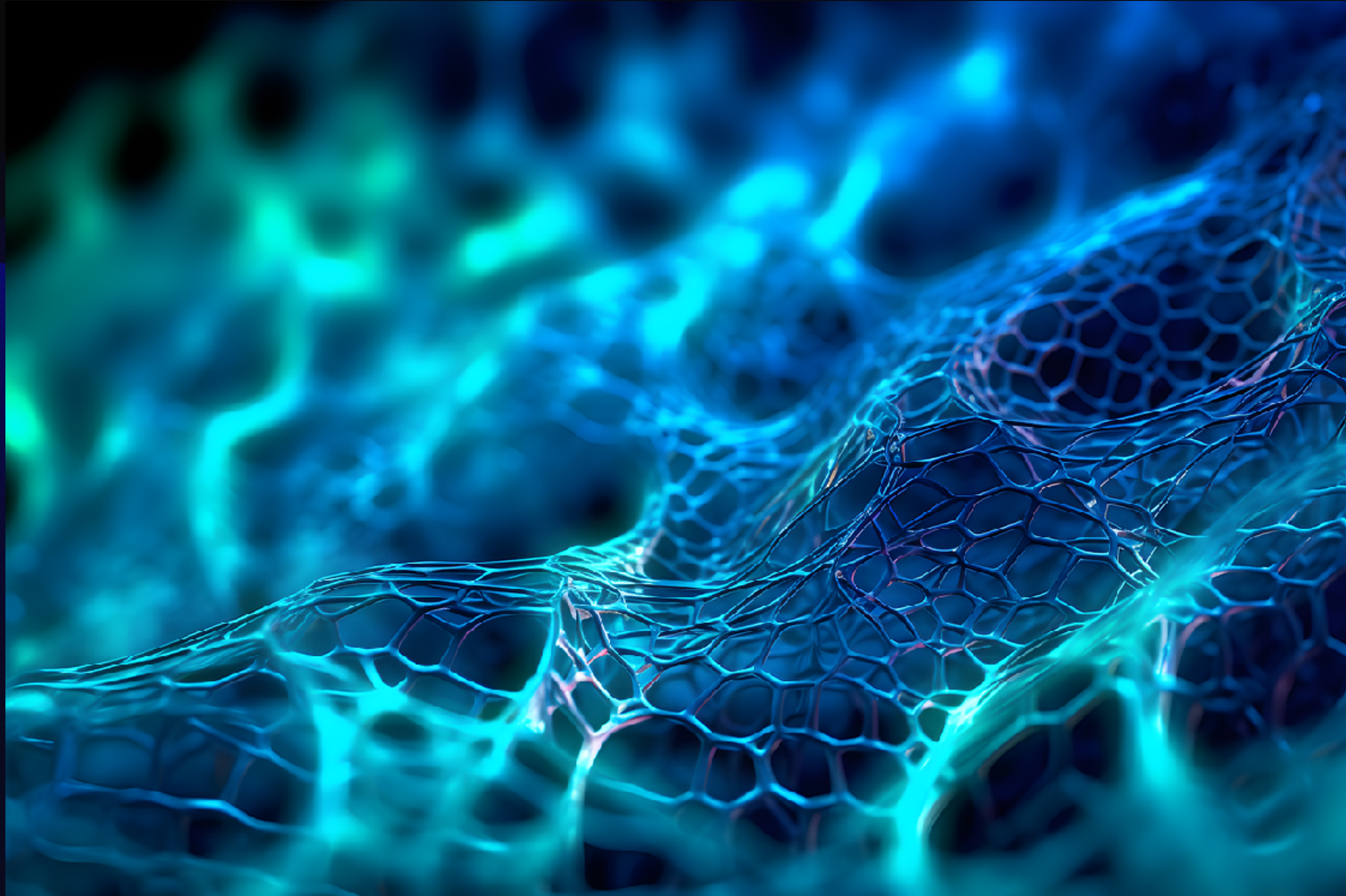
Problems Data Science can solve...

- Predict whether a patient as either diseased or healthy based on their symptoms and the doctor's past experience with patients.

Problems Data Science can solve…

- Predict an athletes race time in the annual Boston marathon based on their fitness and training, and other athletes past fitness, training and Boston marathon race times.

Problems Data Science can solve...

- Separate a data set of human genetic information (DNA sequences) into groups that correspond to ancestral subpopulations.

Problems Data Science can solve...

- Determine whether an environmental intervention (e.g., using less salt on the roads in the winter) causes a change in environment pollution levels.
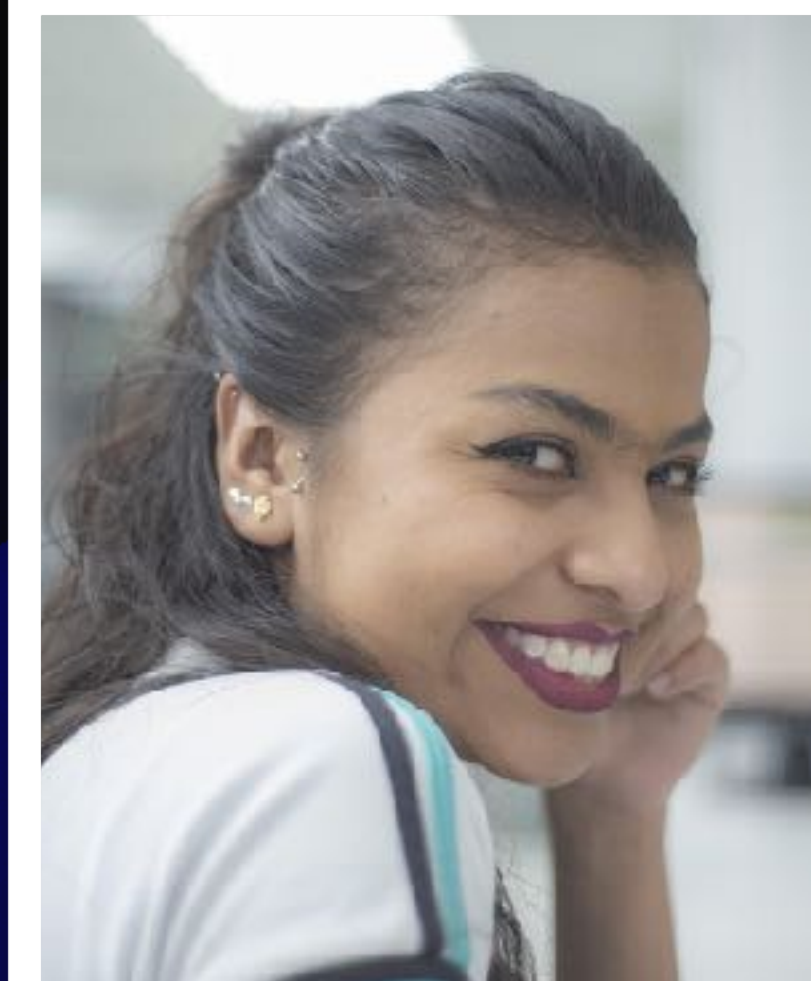
Who is the Data Science Major for?
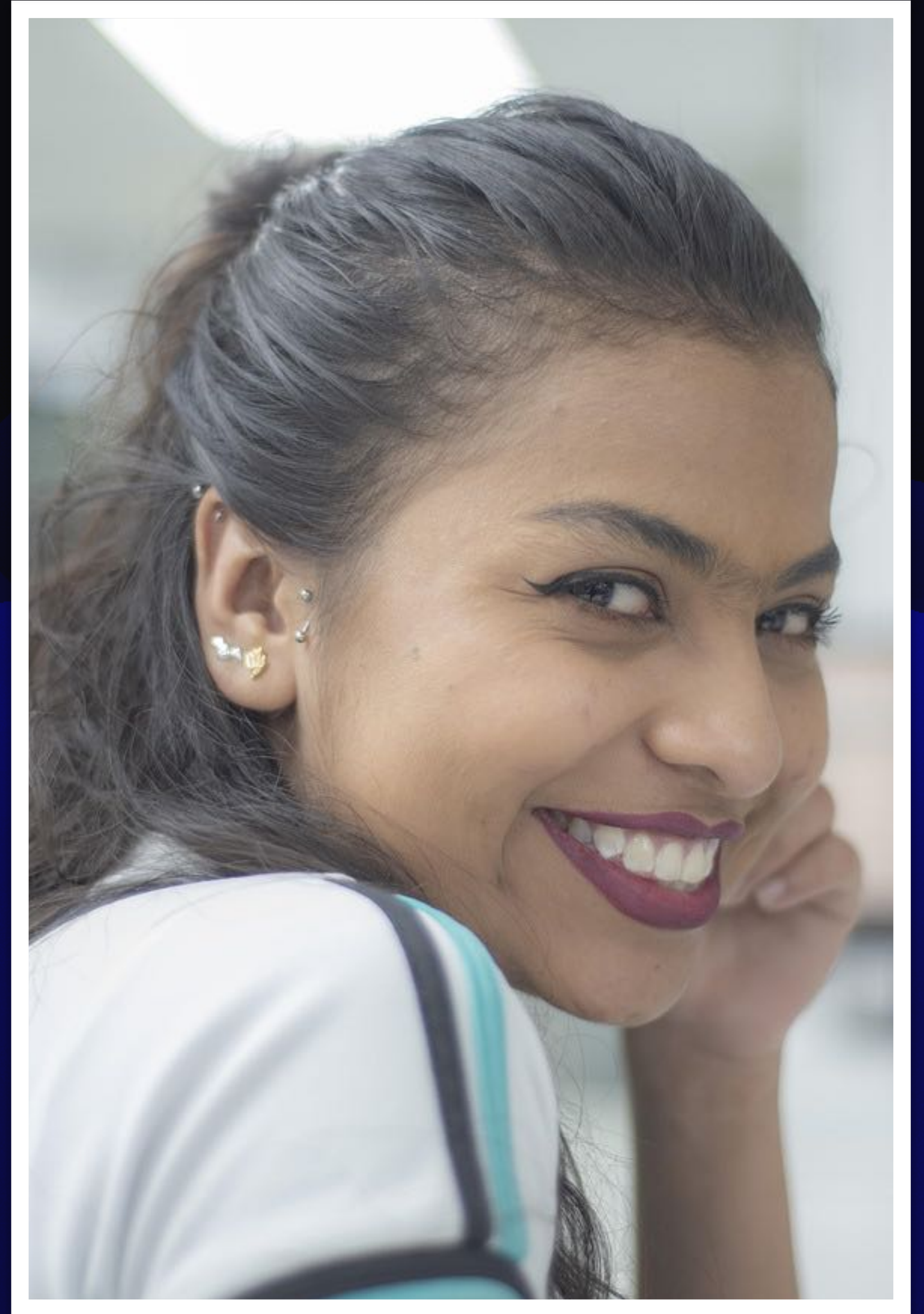

Claire

Weilin

Swetha

Jake

Maria

... and you !

Maria

Career goal: Data analyst in an NGO

Maria is from Venezuela originally, but her family moved to Canada when she started high school. She loves computers, cares deeply about the environment and thoroughly enjoys making things for others to use. In her high school, she learned about the programming language Python and Jupyter notebooks in her environmental studies class where they were used as a digital lab notebook. She also participated in a Girls Who Code workshop where she made a fun web app about measuring your carbon footprint, which she enjoyed sharing with her friends and family. Maria wants to get a University degree that will allow her to get a job in a non-governmental organization (NGO) dedicated to the conservation of the environment. Maria is very independent and self-motivated, however she often struggles to work well with others. Neither of her parents attended university and she feels isolated trying to navigate UBC's policies and requirements.

Claire

Career goal: PhD in a health-related domain

Claire grew up in Vancouver. During high school she enjoyed quantitative courses, including Math, Stats and Computer Programming. However, her passion is in public health. She earned a Bachelor of Science in Health Sciences from Simon Fraser University and wants to combine her interests by learning programming and data analysis skills to improve public health decisions. Eventually she wants to get a PhD in Public Health so that she can better design strategies for delivering health services. She thinks she might also like to teach, and so her ideal goal is to become a professor. Since she has not focused on quantitative coursework since high school, she is planning to earn a Bachelors in Data Science before applying to PhD programs. Claire is a very social person and loves working with others and collaborating in multidiscipline teams. However, she often struggles with multitasking and tight deadlines.
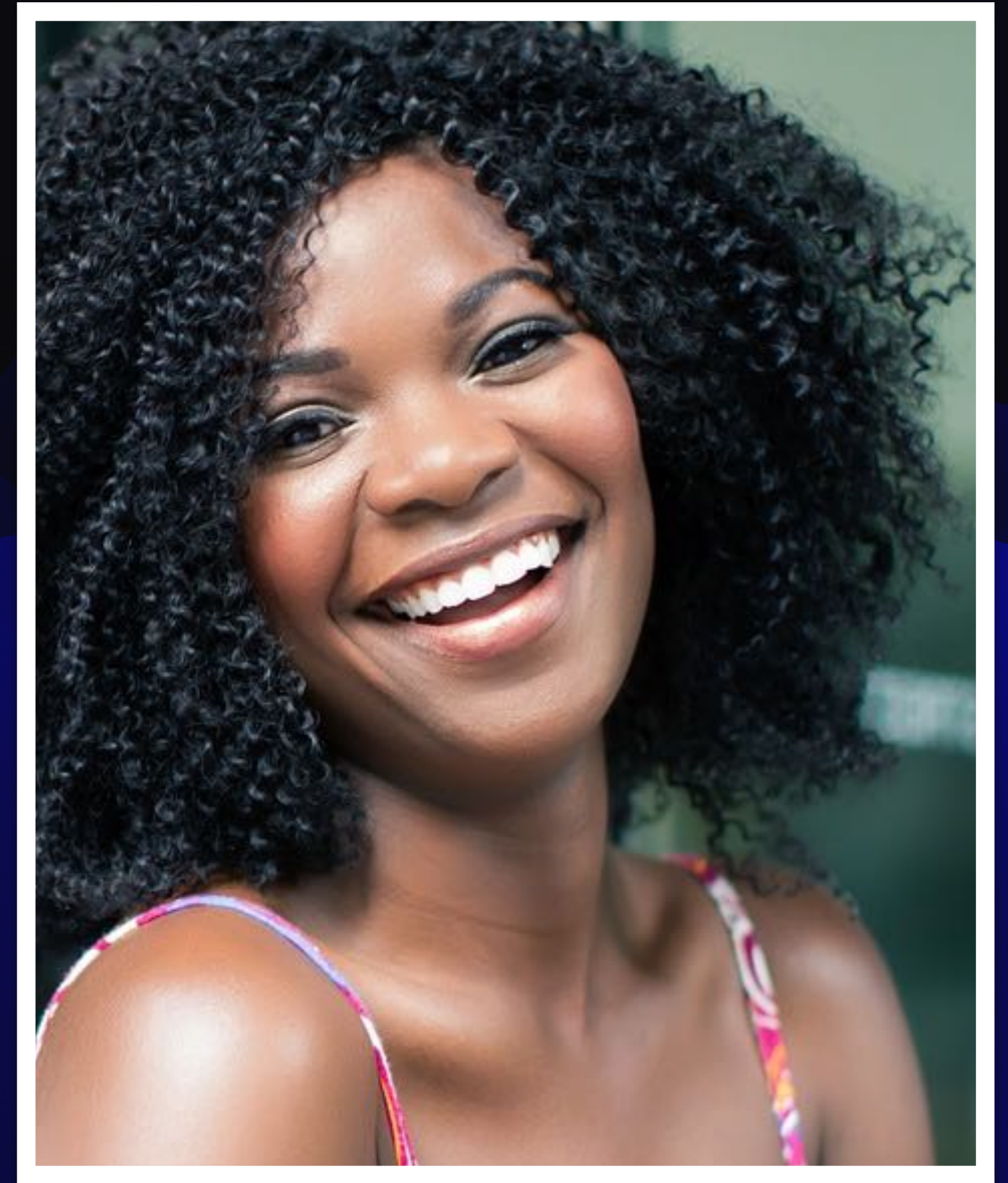
Program Goals

- Offer a comprehensive curriculum that prepares students for a career or graduate study in Data Science, and that further strengthens UBC's position as an Educational Leader within the discipline.

- Provide broad expertise of data science methods and their underlying principles.

- Develop students' ability to apply, evaluate, and compare the performance of various data models.

- Teach students to formulate relevant questions to address data science problems and design reproducible data analyses.

Program Goals

- Teach students to formulate relevant questions to address data science problems and design reproducible data analyses.

- Deliver a flexible experience allowing students to specialize in their preferred data science concentration.

- Adapt and innovate to account for an evolving discipline.

- Promote professional conduct by prioritizing fairness, ethical practices, privacy, security, and collaboration in data science projects.

What can you do with a Data Science Major

You will be the first cohort (!!), but people from related programs in Data Science at UBC (MDS) have gone onto:

- Data Scientist
- Data Analyst
- Machine Learning Engineer
- Prompt Engineer
- Data Engineer

Industries MDS grads work in:

- Finance, Insurance, Government and Public Administration, Healthcare, Education, Technology/Information Technology, Marketing & Communication, Consulting, Mining & exploration, Agriculture, Forestry, Travel and transportation, Other Sciences

How do I apply to the DSCI Major?

Follow the same process as the Bachelor of Science Specialization

BSc Specialization Application: Requirements

The application will **open** in Spring 2025.

You must complete all departmental and faculty requirements listed below by the end of the current Winter Session for any specialization to which you apply.

Which courses do I need to take to apply?

Q: I am a first-year student in the Faculty of Science and would like to apply for the DSCI Major - what are the admission requirements?

A: The admission eligibility requirements are now set. To be eligible to apply for the new DSCI major program, students will need to take and successfully complete DSCI 100 and Math 100 (or equivalent). In addition, students are **highly encouraged** to complete CPSC 103 (or CPSC 110) by the end of the summer. Otherwise, students will not be able to enroll into DSCI 220 in Year 2 Term 1 or DSCI 221 in Year 2 Term 2 and this means it will take longer to complete the program. Completing the eligibility requirements does not guarantee admission into the program.

Note: students in the Science One program will also be eligible to apply but need to know some additional information (in the next question).

What average do I need to get in ?

N/A !

Students who select the DSCI Major will get priority...

How will we determine who gets in?

To be determined !!

(We are working on a plan … more details will be released soon!)

DSCI Major Program

Year 1: focuses on providing a foundation

Year 2: focuses on developing the foundation

Year 3 & 4: Specialization in data science & customization

Year 1 of the DSCI Major

Course code	Course title	Credits
DSCI 100	Introduction to Data Science	3
CPSC 103	Introduction to Systematic Program Design	3
MATH 100 (or 180 or 120 or 110)	Differential Calculus with Applications	3
MATH 101 (or 121)	Integral Calculus with Applications	3
SCIE 113	First-Year Seminar in Science	13
	Constrained elective in Communication	3
	Free electives	12

Year 2 of the DSCI Major

Course code	Course title	Credits
DSCI 200	Navigating Data: Acquisition, Exploration and Management	3
DSCI 220	Discrete Math for Data Science	4
DSCI 221	Data Structures for Data Science	4
MATH 200	Calculus III	3
MATH 221	Matrix Algebra	3
STAT 201	Statistical Inference for Data Science	3
	Free electives	10

Year 3 and 4 of the DSCI Major

Course code	Course title	Credits
CPSC 330 or 340	(Applied) Machine Learning	3
CPSC 368 or 304	Databases in Data Science	3
STAT 301	Statistical Modelling for Data Science	3
STAT 302	Introduction to Probability	3
STAT 305	Introduction to Statistical Inference	3
STAT 443	Time Series and Forecasting	3
DSCI 310	Reproducible and Trustworthy Workflows for Data Science	3
DSCI 320	Visualization for Data Science	3
DSCI 430	Fairness, Accountability, Transparency and Ethics (FATE) in Data Science	3
	Chosen from a list of courses which include MATH 307, CPSC302, CPSC 320, CPSC 440, CPSC 406, STAT 406, STAT 405	6
	MATH/STAT/CPSC/DSCI courses at the 400-level, or higher	12
	Free Electives	15

Program Extras

- Dedicated staff to help build community in the program !

- Really friendly and engaged faculty members !

- Mentoring program for students !

- Co-op program !

Contact us!

datascience.ubc.ca/major

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