# DATA SCIENCE FALL 2022 ORIENTATION

**9/9/2021 @ 9am in M3 2103 Data Science Grad Lounge**

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
<th>Speaker(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>9:00 am</td>
<td>Welcome, Registration and CONTINENTAL BREAKFAST</td>
<td>Ryan/Silvana</td>
</tr>
<tr>
<td>9:15 am</td>
<td>Roundtable Introductions</td>
<td>Silvana</td>
</tr>
<tr>
<td>9:30 am</td>
<td>Icebreaker</td>
<td>Ryan</td>
</tr>
<tr>
<td>9:50 am</td>
<td>Director Greetings and Introduction to the Program</td>
<td>Mu</td>
</tr>
<tr>
<td>10:00 am</td>
<td>BREAK</td>
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</tr>
<tr>
<td>10:10 am</td>
<td>Administration &amp; Program Overview</td>
<td>Ryan/Silvana</td>
</tr>
<tr>
<td>10:25 am</td>
<td>Co-op Introduction</td>
<td>Justin Kiefer</td>
</tr>
<tr>
<td>10:35 am</td>
<td>Vector Institute</td>
<td>Taylor Walker</td>
</tr>
<tr>
<td>10:50 am</td>
<td>Program Ambassador &amp; MGSA (Virtual join)</td>
<td>Hrithik Gavali</td>
</tr>
<tr>
<td>11:00 am</td>
<td>Computer Lab and Software</td>
<td>Jim Johnston</td>
</tr>
<tr>
<td>11:20 am</td>
<td>BREAK</td>
<td></td>
</tr>
<tr>
<td>11:30 am</td>
<td>Open Panel with Profs, Director, Taylor</td>
<td>Multiple</td>
</tr>
<tr>
<td>12:00 pm</td>
<td>International Student Office</td>
<td>Edita Gachene</td>
</tr>
<tr>
<td>12:15 pm</td>
<td>Next Steps</td>
<td>Silvana/Ryan</td>
</tr>
<tr>
<td>12:20 pm</td>
<td>EVENT CONCLUDES</td>
<td></td>
</tr>
</tbody>
</table>
WELCOME & INTRODUCTIONS

Ryan McGuinness & Silvana Shamouon
Graduate Program Administrators
Data Science Graduate Program
INTRODUCTIONS!
ROUND TABLE INTRODUCTIONS

1. Your name
2. Where you are from
3. What you were doing before graduate studies
4. Why you decided to apply for MDSAI/MMath
5. Some fun facts about yourself (2 truths & 1 lie style!)

Tell us 2 truths and 1 lie in any order and the class will guess which fact is a lie!
GREETINGS FROM THE DIRECTOR

Mu Zhu,
Director
Data Science Graduate Programs
THANKS TO MY PREDECESSORS!

- Professor Yuying Li
  - Founding Program Director (< 2021)
- Professor Stephen Vavasis
  - Interim Program Director (2021.01 – 2021.08)
I DECLARE THE OFFICIAL BEER OF OUR PROGRAM TO BE ...

- Three reasons:
  - Ryan
  - Silvana
  - Statistics
MY PERSONAL ADVICE TO STUDENTS

- mathematics/theory vs software/practice
  - ability to create new software, not just use existing software
- skill/vision/perspective vs specific knowledge
  - focus on broadening your experiences and tasting different ways of thinking
  - not a checklist of specific know-hows—many become outdated fast anyway
  - not “end of the world” if a specific course is not available; take another one
- faculty freedom in teaching vs a fixed, rigid, standardized syllabus
  - if the latter, there’d be no value in going to “top schools”
THE “GRADUATE CALENDAR” IS OUR “CONSTITUTION”!

- [https://uwaterloo.ca/graduate-studies-academic-calendar/mathematics](https://uwaterloo.ca/graduate-studies-academic-calendar/mathematics)

Data Science

Data Science and Artificial Intelligence
EXAMPLES:

- Core courses
  - “At the discretion of the Data Science Committee, substitutions may be allowed.”

- Elective courses
  - “Courses not on this list are subject to the approval of the Graduate Director.”

- “In order to remain in good academic standing, students must maintain an average of 75% and a minimum grade of 70% in all their courses. ... Students whose average falls below the program’s minimum requirements may be required to withdraw from the program.”
WHOM TO APPROACH?

- **specific** program administrator (i.e., Ryan + Silvana)
  - e.g., forms, rules/procedures (co-op, graduation, ...), ...
  - Office hours (Fall 2022):
    - T (M3 2103 lounge meeting room), 10 – 11:30AM
    - Th (M3 2118 office), 10 – 11:30AM
  - **email**: ds.grad.admin@uwaterloo.ca

- **“philosophical”** program director (i.e., Mu)
  - e.g., advice (academic, career, ...), concerns, complaints, ...
  - Office hours (Fall 2022): M, 14:30-16:00 & W, 15:45-17:15; M3 2103
  - **email**: ds-director@uwaterloo.ca
  - **telegram**: @statprofz (experimented last year, will continue this year)
COMPUTING & SPACE INFORMATION

Mu Zhu,
Director
Data Science Graduate Programs
COMPUTING AND SOFTWARE

- The **mandatory** Math Faculty Orientation on **September 6th** should have included important information regarding:
  
  - VPN, eduroam, …
  
  - Servers (`linux.math.uwaterloo.ca, windows.math.uwaterloo.ca, …`)
    
    - also `biglinux.math.uwaterloo.ca, fastlinux.math.uwaterloo.ca`

  - Software (R, Python, Matlab, Microsoft 365, …)

  - File Storage (`files.math.uwaterloo.ca`)

  - UW IT departments + help desk

  - etc
SPACES

- The Data Science program has designated student spaces in the M3 building!
- **Quiet** study space (M3, Rm. 2102) with many terminals
  - **either** log directly into `windows.math.uwaterloo.ca` or `linux.math.uwaterloo.ca`
  - **or** use as docking station (screen + keyboard) for your own laptop
- Lounge (M3, Rm. 2103) for study groups, hanging out, ...
  - **note:** program has right of first use (e.g., director’s office hours, meetings of the steering committee, etc)
BREAK

Next up: Administration & Program Overview
ADMINISTRATION & PROGRAM OVERVIEW

Ryan McGuinness & Silvana Shamuon
Graduate Program Administrators
Data Science Graduate Program
ADMINISTRATIVE TOPICS

1. Your **EMAIL** account (ending in @uwaterloo.ca) is set up automatically at the time of enrollment but you may need to register. Check your **UW email** regularly.

2. Update your **MAILING ADDRESS** on QUEST as soon as possible. As the university will use this as your primary mailing address.

3. For MMath in DS students, funding is handled by your home unit (your supervisor’s department/school). Please connect with them if you haven’t already and copy ds.grad.admin@uwaterloo.ca.
TYPE ALL FORMS!

Remember, UWaterloo DOES NOT accept handwritten forms. All forms will be electronically fillable using Adobe Reader or MS Word.
MANDATORY GRADUATE STUDENT TRAINING

Grad students must complete the following training modules in the first 8 weeks.

<table>
<thead>
<tr>
<th>Delivery</th>
<th>Course ID</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Online – Safety Office</td>
<td>Employee Safety Orientation (SO1001)</td>
<td>~60 min</td>
</tr>
<tr>
<td>Online – Safety Office</td>
<td>WHMIS 2015 (SO2017)</td>
<td>~45-60 min</td>
</tr>
<tr>
<td>Online – Safety Office</td>
<td>Workplace Violence Awareness (SO1081)</td>
<td>~60 min</td>
</tr>
<tr>
<td>Online – LEARN (for TAs only)</td>
<td>Accessibility Training module</td>
<td>~30 min</td>
</tr>
<tr>
<td>Online – LEARN</td>
<td>Graduate Academic Integrity Module</td>
<td>~1-2 hours</td>
</tr>
</tbody>
</table>
## Support Area

<table>
<thead>
<tr>
<th>Support Area</th>
<th>What They Do</th>
<th>Location/Contact</th>
</tr>
</thead>
</table>
| Graduate Studies and Postdoctoral Affairs (GSPA) | Provides support to students, postdocs, staff and faculty who are engaged in graduate work and research at the University of Waterloo.                                                                        | The Centre, Needles Hall, 2nd floor, room 2201  
askthecentre@uwaterloo.ca  
519-888-4567 ext.42268                                                                                  |
| The Centre                                       | General UWaterloo questions, official documents                                                                                                                                                             | The Centre, Needles Hall, 2nd floor, room 2201  
askthecentre@uwaterloo.ca  
519-888-4567 ext.42268                                                                                  |
| Counselling Services                             | Professional counselling services are provided, at no charge, in a private and confidential setting to UWaterloo students. Get self-help, mental health, urgent care contact information and more. | Needles Hall, 2nd floor  
519-888-4567 ext. 32655                                                                                     |
| Health Services                                  | Provides convenient, confidential and comprehensive medical care to registered students at Waterloo. They work in coordination with other health-related services on campus and in the Kitchener-Waterloo community. | Health Services Building  
519-888-4096                                                                                                  |
| Student Success Office (SSO)                    | Provides and facilitates strategic student support for academic and personal success.  
*Support for international students include immigration consulting, SIN, application help, etc.                                            | South Campus Hall, second floor  
519-888-4567 ext. 84410                                                                                     |
| Co-operative Education & Centre for Career Action (CCA) | General co-op questions, interview and career services available to students                                                                     | William M. Tatham Centre (TC)  
ceca@uwaterloo.ca  
519-888-4026                                                                                               |
1. For Fall 2022, graduate data science courses will be available in-person and some online instruction may be available as shared by your instructor (read more details).

2. Students will require a fast and reliable internet connection to access virtual computing resources (more information to follow), complete coursework, and attend any live lectures.

3. For those planning to come to campus in-person from outside of Canada, please check the Government of Canada policies.

Further Information RE: Covid and campus given via Grad Ready (keep a look out for ongoing communication)
MASTERS OF DATA SCIENCE AND ARTIFICIAL INTELLIGENCE (MDSAI)

Full-time program structure
- 12 to 16-month professional coursework-based program
- Degree requirements: 9 courses and 1 co-op term*

*students may extend their work term for up to 8 months with the same employer

Part-time program structure
- 36-month duration with 1 course per term

Courses at a glance
(not an exhaustive list)
- Data-Intensive Distributed Computing and Analytics
- Exploratory Data Analysis
- Statistical Learning: Classification
- Convex Optimization and Analysis
- Data Visualization
- Database Systems Implementation
- Machine Learning: Statistical and Computational Foundations
- Probabilistic Inference and Machine Learning
- Advanced Topics in Artificial Intelligence
- Optimization for Data Science
- Computational Inference
- Principles of Data Management and Use
- Distributed Systems
This cohort’s co-op term is **Spring 2023 (May – August 2023)**.

*Mandatory preparatory workshops* for co-op Masters students will be held on the following dates: You must attend **ALL 3 dates** to complete these workshops before your co-op term. These will be virtual and the links below will take you to the appropriate Zoom meeting.

<table>
<thead>
<tr>
<th>Workshop</th>
<th>Date</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Co-op Documents (Résumés, cover letters) workshop</td>
<td>Thursday Sept 29th</td>
<td>10 - 11:30AM</td>
</tr>
<tr>
<td>Interviews workshop</td>
<td>Thursday October 6th</td>
<td>10 - 11:30AM</td>
</tr>
<tr>
<td>Co-op Education process &amp; strategy workshop</td>
<td>Thursday October 20th</td>
<td>10 - 11:30AM</td>
</tr>
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</table>

*International students will require a **co-op work permit**. Justin Kieffer from Co-operative Education will go into more detail later.*
MASTER OF MATHEMATICS IN DATA SCIENCE (MMATH IN DS)

Program Structure
- 16 to 24-month research-based program with guidance from a faculty member in the field of Data Science
- Degree Requirements:
  - 4 courses (see courses at a glance on previous slide)
  - Master's Thesis

Faculty Members’ Fields of Study
- Artificial Intelligence
- Causal Inference
- Computer Systems and Databases
- Data Exploration and Analysis
- Data Visualization
- Ethics in Artificial Intelligence
- Machine Learning
- Numerical Linear Algebra
- Optimization
- Scientific Computing
- Statistical Learning
3 live virtual workshops instructed by Professor Maura Grossman (offered at two different times each) will be offered this Fall term to complete your required Ethics milestone.

It is strongly recommended that you complete these workshops this Fall 2022 term. More information, including syllabus and links will be provided by email in the next few weeks.

<table>
<thead>
<tr>
<th>Workshop</th>
<th>Date Options (attend one or the other each week)</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethics Workshop 1</td>
<td>Monday, Sep 26(^{th}) Friday, Sep 30(^{th})</td>
<td>1pm – 4pm ET</td>
</tr>
<tr>
<td></td>
<td></td>
<td>9am – 12pm ET</td>
</tr>
<tr>
<td>Ethics Workshop 2</td>
<td>Monday, Oct 3(^{rd}) Friday, Oct 7(^{th})</td>
<td>1pm – 4pm ET</td>
</tr>
<tr>
<td></td>
<td></td>
<td>9am – 12pm ET</td>
</tr>
<tr>
<td>Ethics Workshop 3</td>
<td>Monday, Oct 17(^{th}) Friday, Oct 21(^{st})</td>
<td>1pm – 4pm ET</td>
</tr>
<tr>
<td></td>
<td></td>
<td>9am – 12pm ET</td>
</tr>
</tbody>
</table>
QUESTIONS?

Prof. Mu Zhu
• Professor & Program Director
• Ds-director@uwaterloo.ca

Meetings available:
• By appointment
• Drop-in hours (M3 2103):
  Mondays: 2:30-4:00PM
  Wednesdays: 3:45-5:15PM

Ryan McGuinness
• Graduate Program Admin
• Ds.grad.admin@uwaterloo.ca

Meetings available:
• By appointment
• Drop-in hours:
  Tues (M3 2103): 10 – 11:30AM
  Thurs (M3 2118): 10 – 11:30AM

Silvana Shamuon
• Graduate Program Admin
• Ds.grad.admin@uwaterloo.ca

Meetings available:
• By appointment Mon, Tues
  and Wednesdays
COURSE ENROLLMENT REMINDERS

Ryan McGuinness & Silvana Shamuon
Graduate Program Administrators
Data Science Graduate Program
COURSE ENROLMENT

- Classes have already started but you may use the QUEST system on-line until **Tuesday, Sep 27th** to add classes to your schedule. Please make sure to check [GSPA’s Important Dates](#) for deadlines. Below are some course-related deadlines to make note of for Fall 2021:
  - **Sep 27**: 100% tuition and fee refund deadline
  - **Sep 28-Nov 22**: Dropping a course adds a WD (withdrew) on transcript
  - **Oct 25**: 50% tuition and fee refund deadline
  - **Nov 23**: Dropping a course adds a WF (withdrew/failure) – grade 32% on transcript

- MDSAI students are normally expected to take 3 courses each study term (First Fall study term, Winter study term, Final Fall study term) for a total of 9 courses. Please consult with the Director for any exceptions to this. We strongly recommend taking a maximum of 3 courses at least in the first term.

- MMath in DS students must complete 4 courses total.

- Students lacking adequate background in computer science or statistics may be required to complete a foundation course (CS 600 or STAT 845) which you would have been instructed to enroll in already.

- EMLS (remedial language courses) do NOT count towards a student's grad course count for a term and EMLS 601R (speaking) & 602R (writing) can be taken in the same term.
Request to waive a core course requirement can be made by submitting a form (completed electronically), Ryan/Silvana, ds.grad.admin@uwaterloo.ca.

Needs evidence (course outline, topics, textbook) indicating a previous course taken is sufficiently close to one of the core courses.

The request needs the approval of program Director, Mu Zhu, ds-director@uwaterloo.ca.

The DS 701/702 project course will require a student to find a willing professor in the DS field and a proposal on the project should be sent to Director for approval.
ACADEMIC INTEGRITY

- Academic integrity is a principle highly valued at UW
- **Policy 71** prescribes UW disciplinary process
- **Rules on collaboration differ from course to course**
  a. Prof A: “No collaboration”
  b. Prof B: “Students can discuss but the final submission should be their own work”
- If the rules for a course are not clear, ask the instructor
- [https://uwaterloo.ca/academic-integrity/integrity-matters-mobile-application](https://uwaterloo.ca/academic-integrity/integrity-matters-mobile-application)
QUESTIONS?

Prof. Mu Zhu
- Professor & Program Director
- Ds-director@uwaterloo.ca

Meetings available:
- By appointment
- Drop-in hours (M3 2103):
  Mondays: 2:30-4:00PM
  Wednesdays: 3:45-5:15PM

Ryan McGuinness
- Graduate Program Admin
- Ds.grad.admin@uwaterloo.ca

Meetings available:
- By appointment
- Drop-in hours:
  Tues (M3 2103): 10 – 11:30AM
  Thurs (M3 2118): 10 – 11:30AM

Silvana Shamuon
- Graduate Program Admin
- Ds.grad.admin@uwaterloo.ca

Meetings available:
- By appointment Mon, Tues and Wednesdays

https://uwaterloo.ca/data-science/current-graduate-students
CO-OP INTRODUCTION

Justin Kieffer

Faculty Relations Manager

Co-operative Education – Faculty of Mathematics
CO-OP IN MDSAI

• As part of the program, you will complete a 4-to-8-month co-op work experience

• Typically, your work term will be during the spring term, which means that you will begin the job search (recruitment) process during the winter term.

• It’s a competitive process, not a work placement, so staying engaged and being proactive in the process is important.

• The important Co-op dates calendar is a great resource to keep on top of deadlines

• Grad co-op students are assessed a co-op fee once employment is secured according to WaterlooWorks records

• You will receive additional training and information on all things co-op in the coming weeks.
HOW WE SUPPORT YOU

• Dedicated Graduate co-op advisor **New for Fall 2022**
  • Single-point of contact during your job search and work term
  • Your advisor will reach out to you in October

• Masters of Math Co-op Workshop sessions – Fall 2022
  • Resumes and Cover Letters
  • How to Interview Effectively
  • Co-op process and Strategy

• Centre for Career Action
  • Graduate career advisors available
  • Additional events and workshops
SOME ‘DATA’...

- MDSAI students achieve exceptional levels of co-op employment, working for a variety of employers across North America including:
  - Huawei
  - Loblaws
  - Manulife Financial
  - Contextlogic/Wish
  - TD Bank
  - Blackberry
  - DarwinAI
  - The Centre for Addiction and Mental Health

- Co-op continues to see increased demand for roles focused on data science, machine learning and artificial intelligence. Recent positions MDSAI students have worked in, include:
  - Data Scientist
  - AI Infrastructure Engineering
  - Data, Insights & Analytics Assistant
  - Machine Learning Research Assistant
  - AI Developer
  - AI Researcher
  - Big Data & Machine Learning Algorithm Engineering

Explore the ‘Where Students Work Dashboard’ to see additional types of jobs students in your program and in similar programs have held.
NEXT STEPS

- Attend the workshops
  - MMath & MDSAI Co-op Series - Session 1 of 3: Documents (resumes and cover letters)
    - Thursday Sept 29th from 10-11:30
  - MMath & MDSAI Co-op Series - Session 2 of 3: Interviews
    - Thursday October 6th from 10-11:30
  - MMath & MDSAI Co-op Series - Session 3 of 3: Co-operative Education process and strategy
    - Thursday October 20 from 10-11:30

- Prepare your cover letter and resume before January

- Log into WaterlooWorks
  - You will not have access to the Co-op jobs until January, but can use the site to view jobs on the other boards, register for events and contact your Graduate Co-op Advisor
  - WaterlooWorks is the primary way your co-op advisors will communicate with you, so check it often
QUESTIONS?
VECTOR INSTITUTE + WATERLOO MMATH IN DATA SCIENCE & MDSAI

Taylor Walker
Specialist, Internships & Work
Integrated Learning
aimasters@vectorinstitute.ai
What does the Vector Institute do?

The Vector Institute is a leader in the transformative field of artificial intelligence, excelling in machine and deep learning — an area of scientific, academic, and commercial endeavour that will shape our world over the next generation.

Vector has created a community of premier AI talent by attracting and retaining top machine learning and deep learning researchers.
Who we work with

Vector helps you connect with the broader AI ecosystem in a variety of ways.
Vector’s goal is to build the next generation of top AI talent in Ontario by working with universities through program recognition and connecting you to opportunities that will accelerate your career in AI.

By joining the Master of Data Science & Artificial Intelligence program at University of Waterloo, you’ve automatically become a part of the Vector community. Your program is recognized by the Vector Institute as it was reviewed by a committee of Vector faculty and industry representatives working in AI.

Learn more about Vector-recognized AI Master’s programs [here](#).
How you can benefit from Vector?
Accelerate your career in AI

Attend career exploration and recruitment-focused events, such as:

• Annual AI Summit & Career Fair on September 22nd and 23rd
• Recruitment Information Sessions

Learn about career pathways and projects in AI by exploring specific industries and topics, such as:

• Research & Careers in AI series

Connect with 140+ organizations
Be one of the 400+ Vector-affiliated students hired by Vector sponsors
Find your next career opportunity in AI

- Connect with over 100 organizations, including Vector industry sponsors, health partners, universities and start ups on the Digital Talent Hub, a curated job board for AI roles

- The platform features internships, part-time and full-time job opportunities

- Let employers find you through our candidate database

Since 2017, 3,700+ postings for AI-focused jobs and internships were offered on Vector’s Digital Talent Hub
Gain exposure to the latest AI research

Learn about the latest AI research from around the globe through events such as:

The Fields Institute Machine Learning Advances and Applications Seminar series

Connect with 700+ researchers in the Vector Community
Acquire real-world AI experience

• Work at Vector on real-world data and AI-related projects across workstreams on Applied Internships including Health, Engineering, Industry Innovation, and Research Operations & Academic Partnerships
• Work with Vector Faculty on Research Internships

• Get paid while you work full or part-time through the internship program

• Internships may be remote or in-person

• Sign up to know when applications open!
Be job ready!

• Leverage Vector for career support activities to aid you in preparing for your internship/job search or career transition

• Visit our YouTube channel to watch past webinars

85+ one-on-one career support sessions and two webinars within the past year

1,740+ Students participated in career development programming
Sara El-Shawa

MASc in Engineering (Collaborative Specialization in AI), University of Guelph ’22
Vector Scholarship in AI Recipient 2020-21

“I’ve been able to collaborate and work with Vector researchers and industry sponsors on several AI projects. I’ve also had the opportunity to explore subjects I was unfamiliar with before joining Vector.”

Tips for Students: Make good use of Vector’s Annual Career Fair and Digital Talent Hub. Subscribe to Vector’s mailing list to find out about our events!
How can you get involved at Vector?

Sign up for our mailing list to hear about upcoming opportunities and events!

Questions or feedback?
Email aimasters@vectorinstitute.ai
CURRENT STUDENT PERSPECTIVE & MATH GRAD STUDENT ASSOCIATION

Hrithik Gavali

MDSAI Student
Grad Data Science Program Ambassador
Math GSA MDSAI Program Director
MDSAI AND CO-OP
From a student’s perspective

Hrithik Gavali

- MDSA Student started in Fall 2021
- Math GSA MDSA Program Director
- Interned as a Software Developer at DRW, Montreal (Co-op)
- Previously:
  - Undergrad from India
  - Worked for 2 years at Barclays before joining uWaterloo
MDSAI AND CO-OP

From a student’s perspective

What will I talk about?

- Math GSA
- Course Selection
- Co-op
- Time Management, Part-time work?
- Academic Integrity
- Waterloo, in and around
MDSAI AND CO-OP
From a student’s perspective

Math GSA

- Objectives (in the Faculty of Mathematics)
  - Providing a forum for the voices of all graduate students
  - Representing the interests of graduate students
  - Promoting, directing and coordinating activities that will benefit the members.

- Duties as a Math GSA MDSAI Program Director
  - Monthly board meeting with Math GSA
  - Arranging events for students of the MDSAI program
  - One-year program = one-year service time

- Running for the position!
  - An email will be sent out for the election (September 2022) from Math GSA
### Course Selection

- **My course structure:**

<table>
<thead>
<tr>
<th>Fall 2021</th>
<th>Winter 2022</th>
<th>Summer 2022</th>
<th>Fall 2022</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>STAT 845</strong> Statistical Concepts for Data Science</td>
<td><strong>STAT 847</strong> Exploratory Data Analysis</td>
<td></td>
<td><strong>CS 794</strong> Optimization for Data Science</td>
</tr>
<tr>
<td><strong>STAT 842</strong> Data Visualization</td>
<td><strong>CS 680</strong> Introduction to Machine Learning</td>
<td><strong>Co-op</strong></td>
<td><strong>STAT 841</strong> Statistical Learning</td>
</tr>
<tr>
<td><strong>CS 651</strong> Data Intensive Distributed Computing</td>
<td><strong>CS 679</strong> Neural Networks</td>
<td></td>
<td><strong>COGSCI 600</strong> Seminar in Cognitive Science</td>
</tr>
</tbody>
</table>
MDSAI AND CO-OP

From a student’s perspective

Co-op

- Process: 5 cycles with each cycle consisting of:
  - Job postings
  - Applications
  - Shortlisting and interviews
  - Ranking and matches

- These Cycles start in the previous term itself. (for example, if your Co-op is in Summer 2023, these cycles would start in Jan 2023 (Winter semester))

- https://uwaterloo.ca/co-operative-education/
Time Management & Part-time work

- 3 courses per semester: demanding coursework.
- Make sure to attend classes and plan your schedule according to the assignment due dates.
- Working Part-time: Not recommended (at least for the first semester). Gauge the course load, your schedule and decide on working part time in the later semesters.
- TA opportunities available (although not guaranteed for MDSAI students).
- Second semester (Winter 2023), would be the heaviest because of the course load (assignments, exams, quizzes, etc) along with co-op applications and interviews.
MDSAI AND CO-OP
From a student’s perspective

Academic Integrity

- Strict Policy for Academic Integrity (Policy 71)
- https://uwaterloo.ca/academic-integrity/
- Make sure NOT to plagiarize in any way. Cite original work wherever required. (In code, reports, papers, etc)
- ASK if you are unsure of doing something. You can ask the Course Instructor, Graduate Coordinator or the Program Director.
- READ the policy once to clear up all the doubts. For example, even reusing your own work without citation counts as plagiarism.
MDSAI AND CO-OP

From a student’s perspective

Waterloo: in and around

- GSA activities at the Graduate House (Meetups, BBQ nights, Drinks nights)
- Waterloo and Kitchener: Pubs, Bars, Parks and Trails
- Winter Activities: Ice Skating rink at Waterloo Public Square and at Columbia Ice Field (CIF) in the University. Skiing and Snowboarding at Chicopee Ski Resort in Kitchener.
- Toronto: 1.5 hours by car or 2.5 hours by GoBus
COMPUTING AND SOFTWARE AT WATERLOO

Jim Johnston
Information Technology Specialist - Team Lead
Math Faculty Computing Facility (MFCF)
THREE ORGANIZATIONS

- IST (Information Systems & Technology) is responsible for campus-wide IT including email, firewall, Learn (course management system), Quest (student records), etc.

- MFCF (Math Faculty Computing Facility) provides servers and applications that support computing for the Faculty of Math except...

- CSCF (Computer Science Computing Facility) provides servers and applications for the Cheriton School of CS.

- MDSAI students are supported by MFCF but may also use services from CSCF if the service pertains to a CS course.
DATA SCIENCE LAB

- Data Science students normally have access to the dedicated Data Science computer lab located in connected rooms M3 2119 and M3 2102.
- Features 37 thin clients in carrels and a group silent study
- HDMI cables are provided to connect monitors to your personal laptop
DATA SCIENCE LAB RULES

- Please do not eat or drink in the computer lab.
- Ensure that all original equipment (keyboard, mouse, monitor, etc.) is plugged back in, desk is tidy, and any personal items are removed for the next student.
- Note that the orange outlets, tabletop outlets and USB ports are currently not working.
- Workstations in the lab cannot be reserved and should not be left unattended with jobs running.
- Report any problems with the lab to the MFCF helpdesk (MC 3017) or send email to mfcfhelp@uwaterloo.ca.
SOFTWARE AVAILABLE

- Microsoft Office should already be installed on MFCF supported computers. Students can download the current version of MS Office (M365) via the M365 web portal (portal.office.com).

- Matlab and all toolboxes are available on servers and may also be downloaded to your personal device. To download Matlab, go to www.mathworks.com, select ‘Academia’, and fill out the form for the campus license.

- Popular free software used in Math such as R, Python, and Julia are available on servers.

- Waterloo also has a campus-wide license for Overleaf, a tool for collaboratively editing LaTeX on the web.
FILE STORAGE

- Your files are stored on a network drive, not on the thin client.
- Using the network drive outside of logging into a thin client requires installation of the VPN (next slide).
- Waterloo offers two options for networked files: Office365 cloud storage (recently renamed “Microsoft 365”) and network drives.
- Microsoft 365 storage can be downloaded (see IST website) and provides up to 5TB of storage.
To access network files and compute servers at Waterloo from off-campus, you must first install and run the AnyConnect VPN client.

This client may be downloaded from the IST website.
NETWORK DRIVE

- Every Data Science student is given a home network drive
- Your network drive is accessible from all on-campus servers.
- It is also available on your personal device off-campus if you connect through the firewall with the VPN.
- The server is called files.math.uwaterloo.ca; instructions for mounting it on both Windows and Mac are available from the MFCF website.
- If your network connection is too slow to support interactive use of your network drive on your local device, you should connect long enough to manually make a local copy.
COMPUTE SERVERS

- You can connect to Linux servers using ssh and windows servers using RDP. VPN is required off-campus.
- The servers are named linux.math.uwaterloo.ca and windows.math.uwaterloo.ca.
- Information on how to connect is available from the MFCF website.
- As mentioned earlier, many mathematical/computational software packages are already installed on the servers.
OPENING A TICKET

- If you need IT assistance, you should open a ticket at rt.uwaterloo.ca. If the ticket pertains to IST (email, Learn, etc.), use the “general” queue. If the ticket pertains to an MFCF service or CSCF service, use the MFCF or CSCF queue.

- You can also request help by email: helpdesk@uwaterloo.ca for IST; mfcfhelp@uwaterloo.ca for MFCF, and cscfhelp@uwaterloo.ca for CSCF; in these cases, the help-desk staff member will open a ticket for you.
Next up: Open Panel Discussions

Think about some questions for our Director, Professors and Taylor from the Vector Institute!
Think about some questions for our Director, Professors and Taylor from the Vector Institute!
STUDENT SUCCESS OFFICE

Edita Gatchene
Specialist, International Student Programs
The following supports for international students are available through the SSO:

- **International Student Experience**
  - International Student Guide (including travel and quarantine resources)
  - International Student Connection e-Newsletter
  - Breakfast Seminars
  - International Peer Community (IPC)
  - UWinterloo

- **Immigration Consulting**
  - Online or in-person same-day appointments with a registered Immigration Consultant
  - Immigration Information Sessions

- **Campus-wide support**
  - Campus-wide international student initiatives
  - Work with Faculty-based Academic Advisors
  - International student F.A.Q.s on the Coronavirus Information website
STUDENT SUCCESS OFFICE: INTERNATIONAL STUDENT SUPPORT

Immigration Consultants

- Ask questions about study permit conditions and policies for working as an international student in Canada
- Get help with your immigration-related applications (i.e. study permit extension, co-op work permit and/or post-graduation work permit)
- Receive immigration support for graduate student dependants and information on how to invite your family to visit
- Visit their website for general immigration information: https://uwaterloo.ca/student-success/international-student-resources/immigration-consulting
- Submit a web form inquiry to our team of consultants: uwaterloo.ca/student-success/ask-immigration-consultant
- Remote and in-person same-day appointments are available Monday – Friday, 10:00 a.m. to 4:00 p.m. You can sign-up via Waterloo’s Portal app; registration starts at 8:00 a.m. each weekday
- Register your immigration status through Portal’s Immigration Document Reminder System. (click on the goose icon and enable the “Are you an International Student?” switch)
Immigration Information Sessions

- Immigration Consultants also host weekly Immigration Information Sessions on a number of topics. You can sign up via Waterloo’s Portal app.

- These sessions are held online through Microsoft Teams. After registering, you will receive a direct Microsoft Teams link to join approximately 20 minutes before the session begins.

- Spaces are limited, so sign up soon!

Sessions on offer for Fall 2022 term

- Co-op Work Permit
- Working in Canada
- Post-Graduation Work Permit (Grad)
- How to Apply for a New Temporary Resident Visa (TRV)
- Flagpoling
- Permanent Residence - OINP
- Pathways to Permanent Residency (to be announced)
NEXT STEPS

Ryan McGuinness & Silvana Shamuon
Graduate Program Administrators
Data Science Graduate Program
HOW TO CONNECT WITH YOUR COHORT

- Telegram App

Download the Telegram App.

Join the conversation here:
https://t.me/+p1LJkywzmoAxNTRh
1. Courses officially started this Tuesday, September 6th! You should be enrolled in 3 courses by now (+ remedials if applicable)

2. Ensure you mark ALL co-op workshops (for MDSAI full-time students) and ethics workshops (all DS students) in your calendar:

<table>
<thead>
<tr>
<th>Workshop (Zoom links)</th>
<th>Date</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethics Workshop 1</td>
<td>Monday, Sep 26th OR</td>
<td>1pm – 4pm ET</td>
</tr>
<tr>
<td></td>
<td>Friday, Sep 30th</td>
<td>9am – 12pm ET</td>
</tr>
<tr>
<td>Ethics Workshop 2</td>
<td>Monday, Oct 3rd OR</td>
<td>1pm – 4pm ET</td>
</tr>
<tr>
<td></td>
<td>Friday, Oct 7th</td>
<td>9am – 12pm ET</td>
</tr>
<tr>
<td>Ethics Workshop 3</td>
<td>Monday, Oct 17th OR</td>
<td>1pm – 4pm ET</td>
</tr>
<tr>
<td></td>
<td>Friday, Oct 21st</td>
<td>9am – 12pm ET</td>
</tr>
<tr>
<td>Co-op Documents (Résumés, cover letters) workshop</td>
<td>Thursday Sept 29th</td>
<td>10 - 11:30am ET</td>
</tr>
<tr>
<td>Interviews workshop</td>
<td>Thursday October 6th</td>
<td>10 - 11:30am ET</td>
</tr>
<tr>
<td>Co-op Education process &amp; strategy workshop</td>
<td>Thursday October 20th</td>
<td>10 - 11:30am ET</td>
</tr>
</tbody>
</table>
3. Complete online mandatory training modules

<table>
<thead>
<tr>
<th>Delivery</th>
<th>Course ID</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Online – Safety Office</td>
<td>Employee Safety Orientation (SO1001)</td>
<td>~60 min</td>
</tr>
<tr>
<td>Online – Safety Office</td>
<td>WHMIS 2015 (SO2017)</td>
<td>~45-60 min</td>
</tr>
<tr>
<td>Online – Safety Office</td>
<td>Workplace Violence Awareness (SO1081)</td>
<td>~60 min</td>
</tr>
<tr>
<td>Online – LEARN (for TAs only)</td>
<td>Accessibility Training module</td>
<td>~30 min</td>
</tr>
<tr>
<td>Online – LEARN</td>
<td>Graduate Academic Integrity Module</td>
<td>~1-2 hours</td>
</tr>
</tbody>
</table>

4. Check your UW email and update Quest personal information

International students:
- Connect with The Centre for help with immigration documents, SIN, health insurance, etc.
- Apply for a co-op work permit if you haven’t already and attend the Co-op Work Permit session on Sep 14