

SFU Invent the Future

Info session

Jan 25, 2023 (Wed)

5:00-6:30 PM

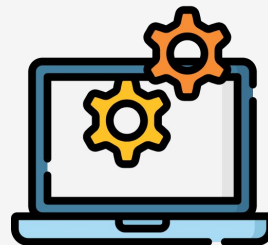
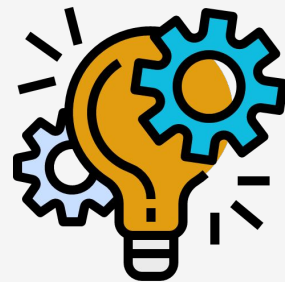


Overview

- About the program
- Curriculum & instruction
- Details for 2023
- Important dates
- Q&A session

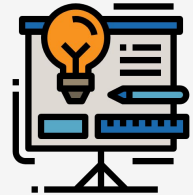
Slido link:

<https://app.sli.do/event/b8PDiljcogBKydBES2xPli>



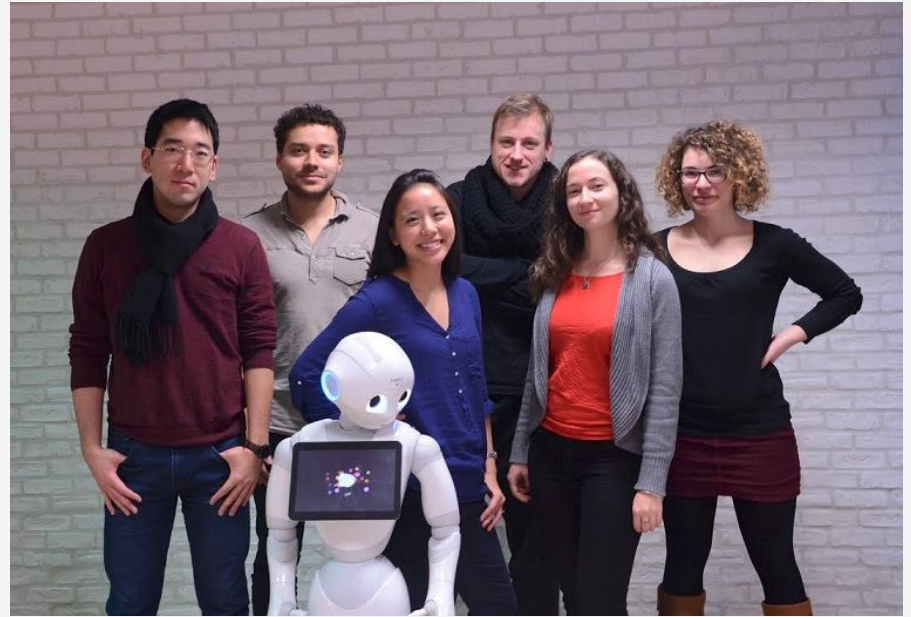
About SFU Invent the Future

Three-week summer enrichment program focused on bringing Artificial Intelligence (AI) expertise, community, and mentorship to trans and cisgender women, non-binary and Two Spirit students in Grade 9 - 12.



Dr. Angelica Lim, Faculty Advisor

- Assistant Professor of Professional Practice, SFU School of Computing Science
- Director of the Rosie Lab
- Led the Emotion and Expressivity teams for the Pepper humanoid robot at SoftBank Robotics.
- Featured on the BBC, TEDDx, hosted a TV documentary on robotics, and was recently featured in Forbes 20 Leading Women in AI.

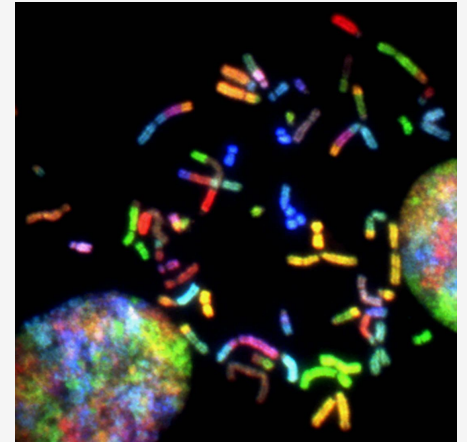
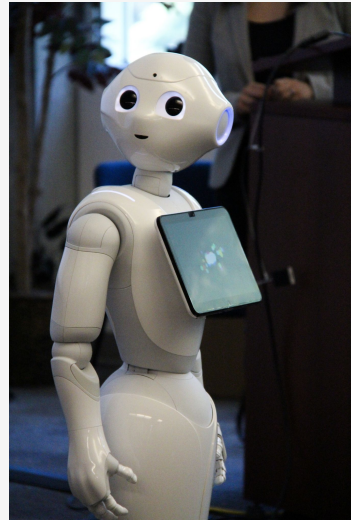


Dr. Angelica Lim and her team.

What is AI?

Artificial intelligence leverages computers and machines to mimic the problem-solving and decision-making capabilities of the human mind.

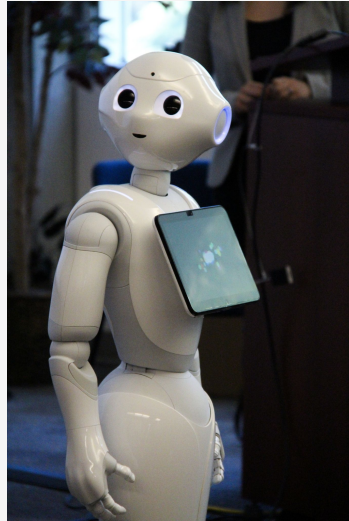
[IBM Cloud Education](#)



Different applications of AI



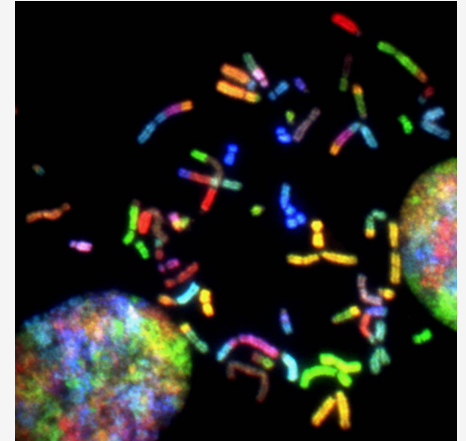
Computer vision



Robotics

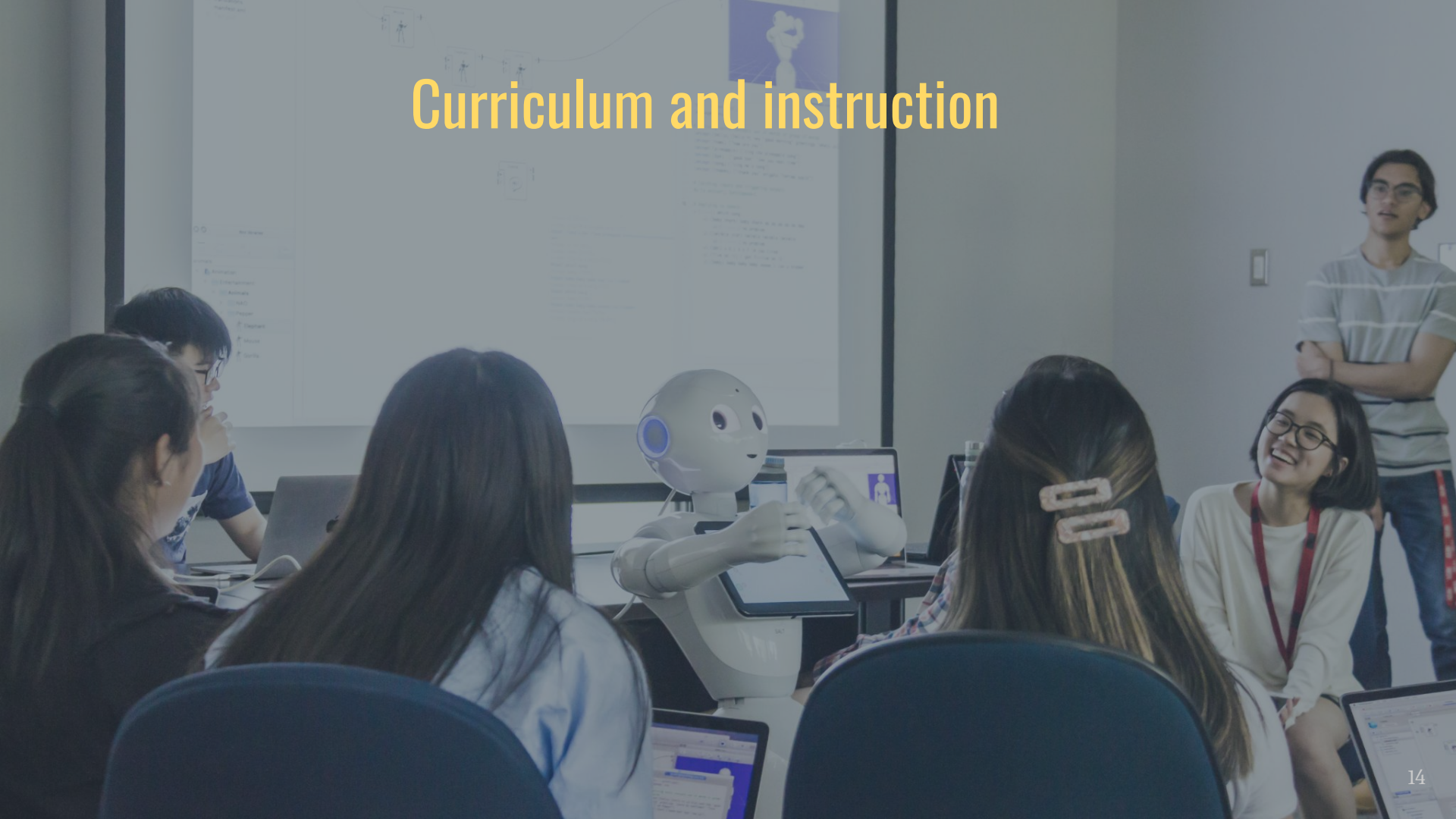


Natural language processing



Computational biology

Curriculum and instruction



Our approach to teaching



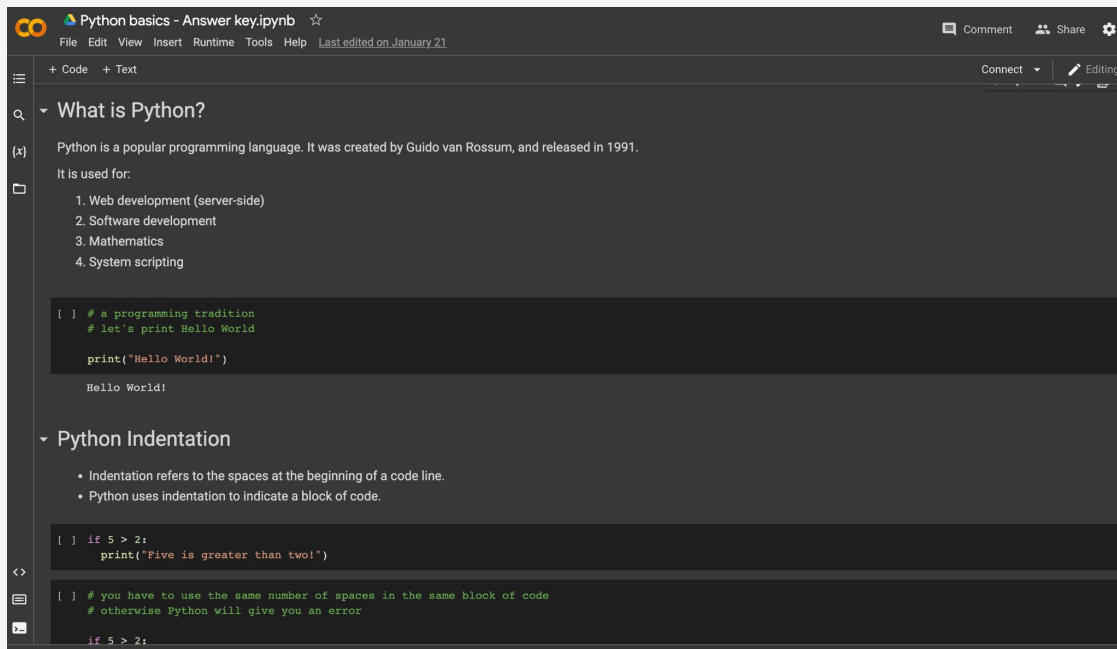
Who are our mentors?



Group photo from 2019.

- Undergraduate and graduate students at SFU
- Program alumni

Week 0: Introduction to Python



The screenshot shows a Jupyter Notebook interface with the following content:

```
Python basics - Answer key.ipynb ☆
File Edit View Insert Runtime Tools Help Last edited on January 21
+ Code + Text
Connect Editing

What is Python?
Python is a popular programming language. It was created by Guido van Rossum, and released in 1991.
It is used for:
1. Web development (server-side)
2. Software development
3. Mathematics
4. System scripting

[ ] # a programming tradition
# let's print Hello World
print("Hello World!")
Hello World!

Python Indentation
• Indentation refers to the spaces at the beginning of a code line.
• Python uses indentation to indicate a block of code.

[ ] if 5 > 2:
    print("Five is greater than two!")

[ ] # you have to use the same number of spaces in the same block of code
# otherwise Python will give you an error
if 5 > 2:
```

- Asynchronous learning on Canvas
- Online coding workshops over Zoom
 - Afterschool
 - Weekends

Week 1-2: AI Concepts & Skills + Group Project



Week 1 - Tentative schedule

		Mon	Tue	Wed	Thu	Fri
		7/11/2022	7/12/2022	7/13/2022	7/14/2022	7/15/2022
Start time	End time					
9:00	9:15	Program overview - Eva	Welcome & Ice breaker - Team CV	Welcome & Ice breaker - Team CV	Welcome & Ice breaker - Team CV	Welcome & Ice breaker - Team CV
9:15	9:30	Welcome note: AI4ALL & CIFAR	Website Portfolio Guidelines - Eva	Code-along: Data Wrangling & Visualization Part 2 - Saba & Pedram	Lecture: Intro to ML - Paige & Janaki	Recap Activity / Discussion - Team NLP
9:30	9:45					
9:45	10:00	Lecture: Intro to AI - Angelica	Lecture: Robotics - Angelica		Code-along: Clustering - Paige & Janaki	Lecture: Ethics & Social Impact of AI - Harinder
10:00	10:15					
10:15	10:30					
10:30	10:45	Break	Break	Break	Break	Break
10:45	11:00	Code-along: Data Exploration Part 1 - Vishakha & Saba	Code-along: Data Exploration Part 2 - Vishakha & Saba Code-along: Data Wrangling & Visualization Part 1 - Saba & Pedram	Group project - Instructors & Alumni TAs	Code-along: Clustering - Paige & Janaki	Group project - Instructors & Alumni TAs
11:00	11:15					
11:15	11:30					
11:30	11:45					
11:45	12:00					
12:00	12:15	Lunch break Office hours - Instructors	Lunch break & social - Team CB	Lunch break Office hours - Instructors	Lunch break Office hours - Instructors	Lunch break & social - Team CB
12:15	12:30					
12:30	12:45					
12:45	13:00					
		Coding	Lecture / Presentation	Group project	Break / Office hours	

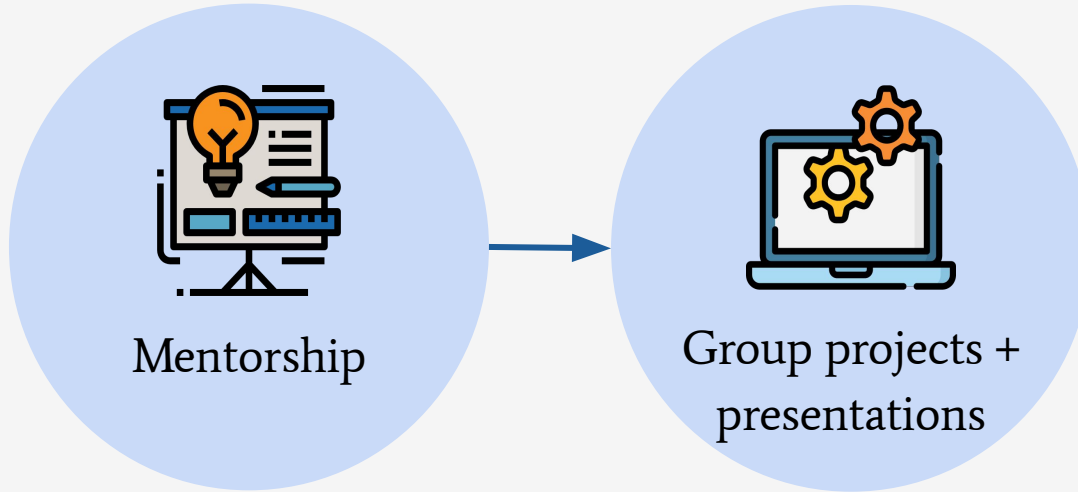
- Students will be grouped based on their project interest.
- Students will also be working in their groups under the guidance of mentors & TAs in Week 1.
- Learning activities include:
 - Lectures
 - Code-along workshops
 - Small-group discussions
 - Online discussion forum
- See ITF 2022 schedule [here](#).

Week 2 - Tentative schedule

		Mon	Tue	Wed	Thu	Fri
		7/18/2022	7/19/2022	7/20/2022	7/21/2022	7/22/2022
Start time	End time					
9:00	9:15	Program overview - Eva	Welcome & Ice breaker - Team CB	Welcome & Ice breaker - Team CB	Welcome & Ice breaker - Team CB	Welcome & Ice breaker - Team CB
9:15	9:30	Recap Activity / Data & Bias - Team CV	Code-along: Classification - Janaki & Karly	Code-along: Probability & Naive Bayes - Pedram & Paige	Recap Activity / ML Algorithms - Team NLP	Lecture: Science Communication - Eva
9:30	9:45					
9:45	10:00	Lecture: NLP - Angel			Lecture: Computer Vision - Yasu	
10:00	10:15					
10:15	10:30	Break	Break	Break	Break	Group project - Instructors & Alumni TAs
10:30	10:45					
10:45	11:00	Code-along: Regression - Mohammad & Vishakha	Code-along: Classification - Janaki & Karly	Code-along: Probability & Naive Bayes - Pedram & Paige	Group project - Instructors & Alumni TAs	AI4ALL Changemakers Info Session & Alumni Panel
11:00	11:15					
11:15	11:30					
11:30	11:45					
11:45	12:00	Lunch break Office hours - Instructors	Lunch break & social - Team NLP	Lunch break Office hours - Instructors	Lunch break Office hours - Instructors	Lunch break & social - Team NLP
12:00	12:15					
12:15	12:30					
12:30	12:45					
12:45	13:00					
		Coding	Lecture / Presentation	Group project	Break / Office hours	

- Students will be grouped based on their project interest.
- Students will also be working in their groups under the guidance of mentors & TAs in Week 2.
- Learning activities include:
 - Lectures
 - Code-along workshops
 - Small-group discussions
 - Online discussion forum
- See ITF 2022 schedule [here](#).

Week 3: Group projects



Week 3 - Tentative schedule

		Mon	Tue	Wed	Thu	Fri
		7/25/2022	7/26/2022	7/27/2022	7/28/2022	7/29/2022
Start time	End time					
9:00	9:15	Program overview - Eva	Welcome & Ice breaker - Team CV	Welcome & Ice breaker - Team CV	Welcome & Ice breaker - Team CV	Closing note: CIFAR
9:15	9:30	Recap Activity / Areas within AI - Team CB	Group project - Instructors & Alumni TAs	Group project - Instructors & Alumni TAs	Project wrap-up / Presentation prep - Instructors & Alumni TAs	What's next: FAS Recruitment
9:30	9:45	Lecture: Computational Biology - Max				Flash talks
9:45	10:00	Break				Break
10:00	10:15					
10:15	10:30					
10:30	10:45					
10:45	11:00	Code-along: Evaluation Metrics - Karly & Mohammad	Group project - Instructors & Alumni TAs	Group project - Instructors & Alumni TAs	Project wrap-up / Presentation prep - Instructors & Alumni TAs	Presentation: Session #1
11:00	11:15					Presentation: Session #2
11:15	11:30					Graduation ceremony
11:30	11:45					
11:45	12:00					
12:00	12:15					
12:15	12:30	Lunch break Office hours - Instructors	Lunch break & social - Team CV	Lunch break Office hours - Instructors	Lunch break & social - Team CV	
12:30	12:45					
12:45	13:00					
		Coding	Lecture / Presentation	Group project	Break / Office hours	

- Students will continue to work in groups on an AI-related project with support from mentors and TAs.
- Students will present their work on the last day of the program.
- See ITF 2022 schedule [here](#).

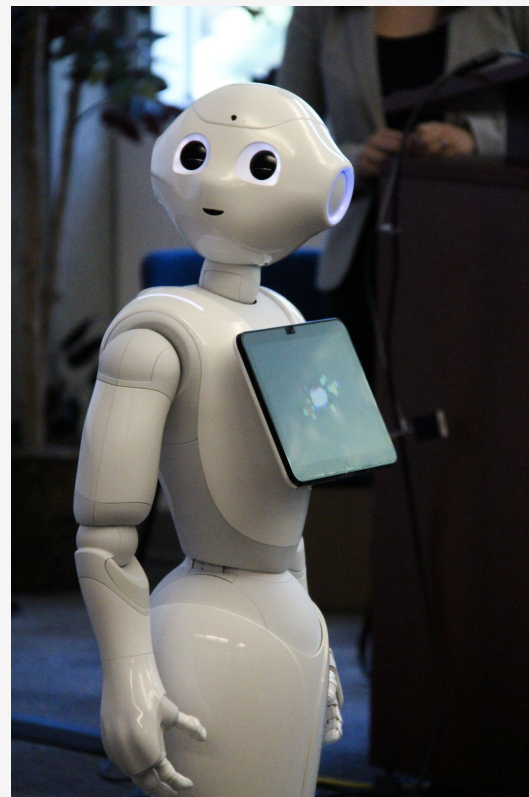
Past student projects

Website portfolio

- [Bioinformatics 2018](#)
- [Natural Language Processing 2019](#)

Flash talk slides

- [Computer Vision 2020](#)



Meet Pepper, the semi-humanoid robot.

Invent the Future 2023

Dates: July 10-28, 2023

Time: 9am - 12pm PST

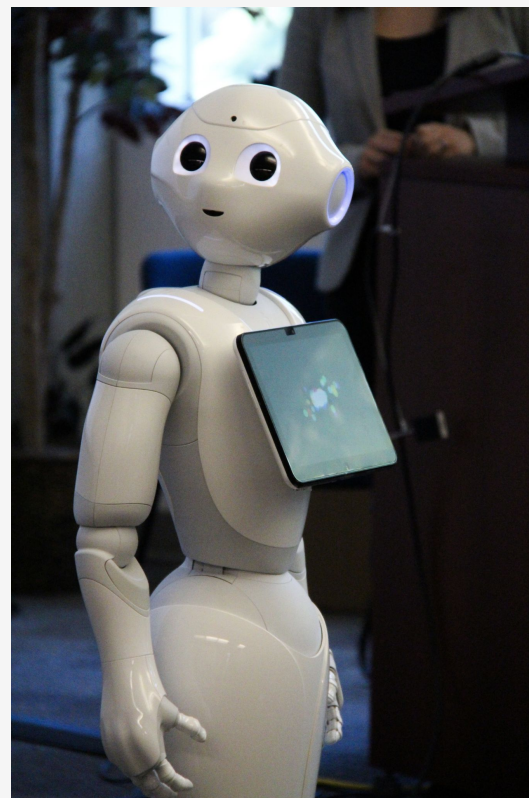
With optional office hours and social activities
from 12pm - 1pm PST

Student: Trans and cisgender women, non-binary and
Two Spirit students in Grade 9 - 12

Delivery: Online with remote support

Program fee: \$500 (Financial bursary available)

Application form: Click [here](#).



Meet Pepper, the semi-humanoid robot.

Important dates

- **Jan 27, 2023:** Application help session from 5:00-6:30 PM PST. Register [here](#).
- **Feb 20, 2023:** Early bird admission deadline at 11:59 PM PST.
- **Mar 13, 2023:** Early bird admission decision.
- **Mar 27, 2023:** General admission deadline at 11:59 PM PST.
- **May 2023:** General admission decision.
- **June 2023:** Offer acceptance & tuition payment.



Photo by [Marc](#) on [Unsplash](#).

Important dates

- **July 4-7, 2023:** Intro to Python workshops.
- **July 10-28, 2023:** SFU Invent the Future!
- [Link](#) to SFU Invent the Future website.



Photo by [Marc](#) on [Unsplash](#).