

# CS6208 : Advanced Topics in Artificial Intelligence

## Graph Machine Learning

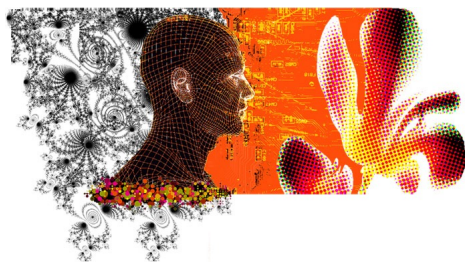
Administrative (Week 11)

Semester 2 2022/23

Xavier Bresson

<https://twitter.com/xbresson>

Department of Computer Science  
National University of Singapore (NUS)



# Feedback

- Please, fill out the feedback if the course was helpful 😊
  - I would like to submit a new course on graph machine learning to the school.
  - School requires (1) enough students to be interested and (2) a good teacher (feedback score).

## Exercise for Student Feedback 2220



NUS Student Feedback <studentfeedback@se.nus.edu.sg>

Friday, 24 March 2023 at 12:29 AM

To: Bresson Xavier

Dear Bresson Xavier,

Every semester, NUS gathers feedback from students on how they experienced teaching in the modules they took and are useful for purposes of continual improvement.

The Student Feedback Exercise for your classes has just started.

[Click here to check the list of classes and to monitor the response rate](#)

The link above provides an overview of the classes you taught this semester, for which feedback is being gathered. Please **ensure that your classes are reflected accurately**. You can also monitor the response rates of your classes.

You could also consider taking the following steps to encourage students to provide feedback to improve your response rate:

- Provide time in class for students to complete the evaluations (preferably at the start of the class)
- Share with your students how you would use the student feedback
- You may consider using the [“In-class instructions to students” slide](#) or share the [infographic](#) to emphasise the importance of providing effective feedback.
- Monitor your response rate from the automated email sent to you or via Canvas during the SF exercise

For more details on SFT: <https://wiki.nus.edu.sg/display/StudentFeedbackFAQ/>

Prof Bernard Tan  
Senior Vice Provost (Undergraduate Education)

# Tentative Lectures

- Introduction to Graph Deep Learning
- Part 1: GML without feature learning (before 2014)
  - Introduction to Graph Science
  - Graph Analysis Techniques without Feature Learning
    - Graph clustering
    - Classification
    - Recommendation
    - Dimensionality reduction
- Part 2 : GML with shallow feature learning (2014-2016)
  - Shallow graph feature learning
- Part 3 : GML with deep feature learning, a.k.a. GNNs (after 2016)
  - Graph Convolutional Networks (spectral and spatial)
  - Weisfeiler-Lehman GNNs
  - • Graph Transformer & Graph ViT/MLP-Mixer
  - • Benchmarking GNNs
  - Generative GNNs and molecular science
  - Combinatorial optimization
  - GNNs for Recommendation
  - GNNs for knowledge graphs
  - Theory of GNNs



Questions?