

# CSC311 Introduction to Machine Learning

## Introductions, Course Policies, and Reciprocal Interviews

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Alice Gao

# Outline

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- [Course Topics](#)
- [Course Policies](#)
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# Introductions

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# Professor, Professor Gao, or Alice



Faculty @ UofT  
Faculty @ UWaterloo  
Postdoc @ UBC

PhD in CS @ Harvard  
Research Internships @UK & @NYC

Undergrad in CS and Math @ UBC  
Co-op jobs @Vancouver & @Toronto

Vancouver, BC, Canada  
Beijing, China

# Turning Points in my Career and Life

- Applying to grad school
- Struggle and growth during grad school
- Teaching during postdoc and beyond

What I live by:

There are many paths to happiness.

Eliminate the ones that don't bring you joy.

Your future holds endless possibilities.

# Professor Alice Gao



My upcoming year at a glance:

- Teaching: CSC311 and CSC413
- Research: CS Education and Games
- Service:
  - TA Coordinator
  - Academic Integrity Coordinator

Hobbies:

- Board games, DND, video games.
- Rock climbing
- Traveling

# Meet Your Peers!

In the next 2 minutes, introduce yourself to someone you don't know and exchange contact information.

What to talk about:

- courses,
- college, dorm, residence,
- clubs, sports, or extracurriculars,
- favourite study spots or places to eat near campus



# Course Topics

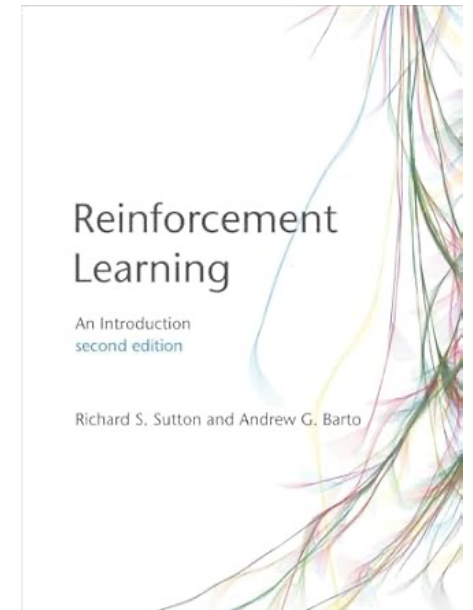
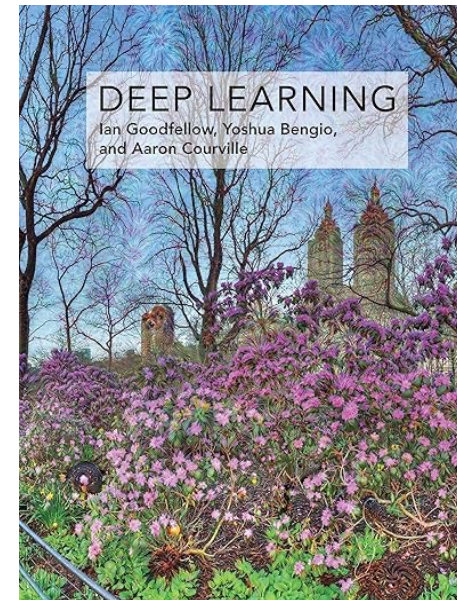
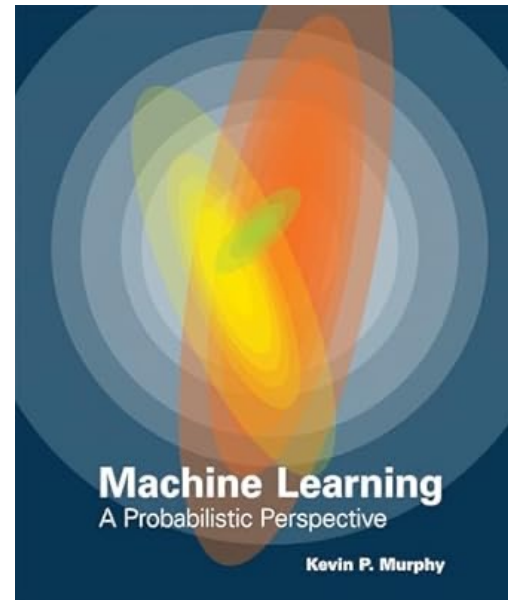
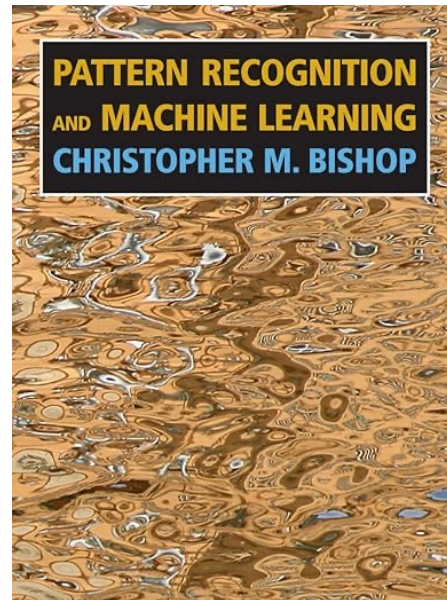
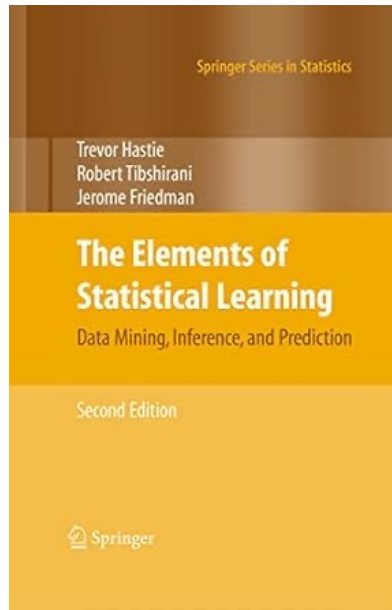
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# Course Topics

Week	Topics	Week	Topics
1	Supervised Learning, Nearest Neighbors, Training, Validation and Test Sets	7	Bias-Variance Decomposition, Bagging, Maximum Likelihood, MAP
2	Decision Trees	8	Naive Bayes
3	Linear Regression Gradient Descent	9	Gaussian Discriminant Analysis
4	Feature Mapping, Regularization Logistic Regression, Stochastic GD	10	Ethics
5	Softmax Regression, Limitations of Linear Models, Multi-layer Perceptrons	11	Clustering: K Means, Mixture Models
6	Backpropagation	12	Principal Component Analysis Recommender Systems

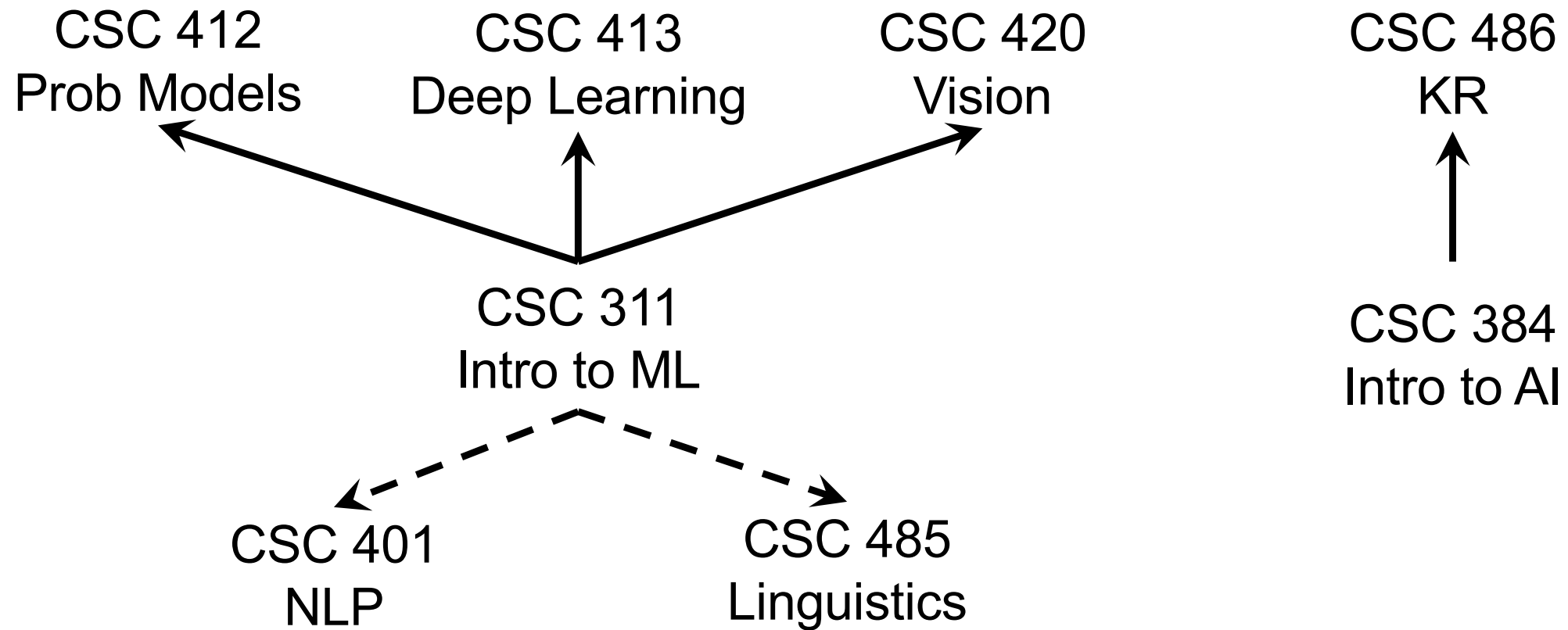
# Recommended (Free!) Textbooks & Resources



## Recommended (Free!) Textbooks & Resources

Title	Authors
The Elements of Statistical Learning	Hastie, Tibshirani, Friedman
Pattern Recognition and Machine Learning	Bishop
Machine Learning: A Probabilistic Perspective	Murphy
Deep Learning	Goodfellow, Bengio, Courville
Reinforcement Learning: An Introduction	Sutton, Barto

# ML/AI Courses in CS at UofT



# Getting Involved in ML at UofT

- CSC494/495 Courses
- [Undergraduate Summer Research Program in Computer Science](#)
- [Research Opportunity Program through Faculty of Arts and Science](#)
- [UTMIST](#)
- [UofT AI Student Group](#)



# Course Policies

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<https://q.utoronto.ca/courses/395616>

# Course Components and Grading Scheme

## Theoretical (70%)

Component	Weight
Lectures	0%
Practice Problems	0%
Test 1	15%
Test 2	15%
Final Exam	40%

## Applied (30%)

Component	Weight
Labs	11%
Project	15%
Ethics Module <ul style="list-style-type: none"><li>• Pre- survey 1%</li><li>• Reflection 2%</li><li>• Post- survey 1%</li></ul>	4%

# Theoretical Course Components

- **Lectures:** skeleton outlines, active learning.
- **Practice problems:** comprehensive coverage, retrieval practice, prompt feedback through multiple channels, select solutions posted.
- **Tests:** 2 tests rather than 1 midterm. 2-stage test.
- **Final exam:** cumulative. 40% auto fail policy.



# Applied Course Components

- **Labs:** frequent, low-stakes, hands-on exercises with help from TAs.
- **Project:** build a classifier to predict a categorical target variable. team of 3-4 students. milestones: data collection, team formation, project proposal, prediction script, and final report.
- **Ethics module:** week 10. 2 surveys and 1 written reflection.

# Course Policies

## Special Considerations

**Labs:** no extensions. drop 2 lowest labs.

**Tests:** acceptable supporting documents for missing a test.

If you miss both tests, make a plan with your college registrar.

**Project:** 3-day extension for free.

## Remark Requests for Tests

Take the first 24 hours to read sample solutions and reflect.

Submit a request by filling out an online form.

# Academic Integrity and Generative AI

## Academic Integrity

- Don't cheat yourself.
- Say no to other people who ask for your work.
- What you should do:
  - Practice solving problems under time pressure.

## Generative AI Policies

- Use generative AI as a tool.
- You are responsible for your learning.



# Reciprocal Interviews

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## Questions for Students

- What are your goals for taking this course?
- What reservations, if any, do you have about this course?
- How can I help you achieve your goals?
- What is the best thing that could happen in this course? The worst thing?
- What norms of behaviour, or ground rules, should we set up to ensure that the course is successful?

## Questions for Professor Gao

- What are your main goals for this course?
- How do you think students learn best, and how will you support that?
- How will you evaluate student learning in this course?
- What do you expect from students in this course?
- How would you describe your role as the instructor?
- What matters most to you when teaching this course?