Your **AI Journey** at

Queen's UNIVERSITY COMPUTING

COGS 100
Introduction to Cognitive Science

Grasp how the human mind generates thought and behaviour (*e.g.*, logic, rules)

COGS 201
Cognition and Computation

Implement computer programs to understand mental processes (*e.g.*, reasoning, decision making)

CISC 271
Linear Methods for Artificial Intelligence

Prepare data for an AI to use (*e.g.*, principal components analysis, linear regression)

MACHINE LEARNING

CISC 352
Artificial Intelligence

Discover the basic principles and tools of AI (*e.g.*, neural networks, transformers)

CISC 453
Topics in Artificial Intelligence

Investigate cutting-edge concepts (*e.g.*, computational perception, neurocomputing)

CISC 455
Evolutionary Optimization and Learning

Enhance an AI with Darwinian principles (*e.g.*, genetic algorithms, evolution strategies)

CISC 371
Numerical Optimization for Artificial Intelligence

Determine how an AI should select the best answer (*e.g.*, constrained data regression and classification)

LARGE LANGUAGE MODELS (LLMS)

CISC 473
Deep Learning

Design deep neural networks using leading-edge principles (*e.g.*, restricted Boltzmann machines, autoencoding)

CISC 474
Reinforcement Learning

Study approaches to problem-solving, planning and reasoning (*e.g.*, Markov decision processes, Monte Carlo learning)

CHOOSE YOUR
AI Electives

- **CISC 251** - Data Analytics
- **CISC 330** - Computer-Integrated Surgery
- **CISC 351** - Advanced Data Analytics
- **CISC 452** - Neural and Genetic Computing
- **CISC 471** - Computational Biology
- **CISC 472** - Medical Informatics

START YOUR
Career in AI

- Machine learning engineer
- AI systems developer
- Data scientist
- AI software engineer