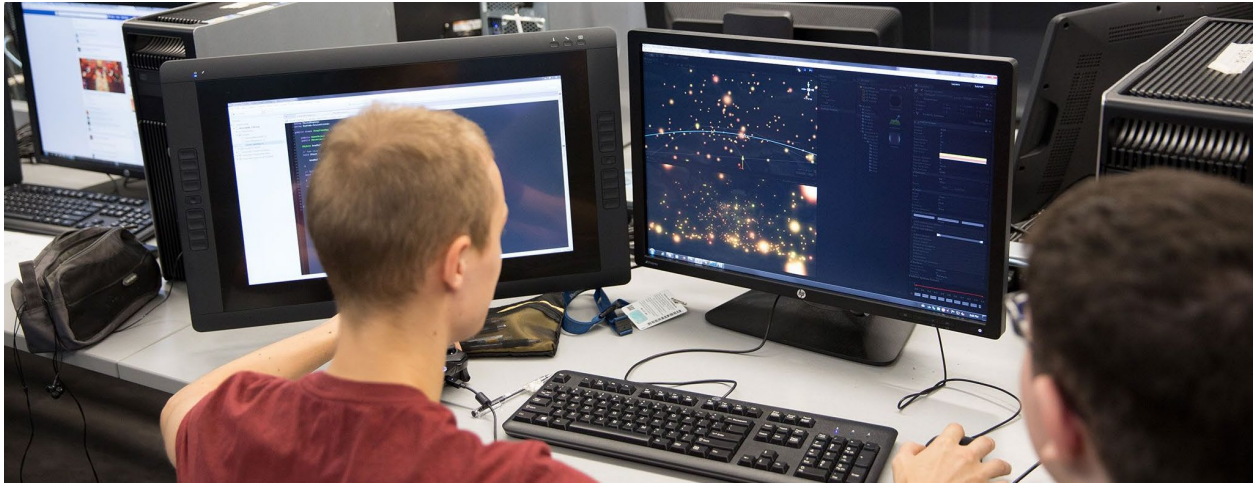# Honours Bachelor of Computer Science – Game Engineering

Meet our students

Our students have a solid foundation in cloud computing, data analytics, game engineering and network engineering. Students specializing in game engineering complete six specialized courses (totalling 336 training hours), mastering the algorithmic, programming, and mathematical techniques used to develop software components for computer games.

Learn more about the classes these students take by visiting the program webpage.

Core competencies and skills

- Developing software applications using C#, C++, Java, Swift, Python, JavaScript and more, using industry-grade frameworks and tools.
- Creating advanced applications that leverage cognitive computing, the cloud, and the Internet of Things.
- Developing systems to control including positioning, rotating, scaling, moving, and animating 2D and 3D objects using mathematical techniques.
- Developing different types of weapons, projectiles, and combat systems into 2D and 3D games.
- Implementing character control systems for playable characters in a physical environment and the artificial intelligence state of non-player characters.
- Designing and implementing strategies for game packing, deployment and updating.
- Integrating knowledge of ethical and legal frameworks with effective business practices.
- Collaborating when working in multidisciplinary teams.
- Communicating professionally and meeting client needs and project due dates.

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- Designing and analysis of machine learning algorithms to create intelligent software solutions.

Work term availability

- Students onboard in the summer (May) and can pursue 4–16-month work terms.

Note: Students who secure an 8-month or longer may be eligible for tax credit.

Work term capabilities

- Designing, implementing, testing, and deploying software systems for various application domains, as well as secure enterprise-grade information systems.
- Formulating solutions to computational problems using a variety of strategies, including common problem-solving paradigms, ad hoc analysis, and critical thinking.
- Planning, designing, and implementing 2D and 3D game software systems using concepts, techniques, and paradigms in the game development field.
- Identifying and utilizing modelling transformations to create scenes composing of multiple objects.
- Implementing optimal programming and mathematical techniques for controlling the behaviour of autonomous agents.
- Integrating graphical content, scripting languages and input from a variety of peripheral devices into a game or game engine.
- Creating engine-level systems for game object management.
- Designing effective user interfaces using human-computer interaction principles.
- Developing mobile applications using representative mobile devices and platforms.

Employer resources

- Employer webpage
- Program information
- Program course schedule

Post a job

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