



DEPARTMENT OF ELECTRICAL & COMPUTER ENGINEERING  
FACULTY OF ENGINEERING AND APPLIED SCIENCE

Teaching Fellow Position  
Academic Year 2020-2021

Posting Date: 27 February 2020  
Closing Date: 20 March 2020

The Department of Electrical and Computer Engineering in the Faculty of Engineering and Applied Science at Queen's University requests applications from suitably qualified candidates interested in teaching **the following undergraduate course** in the 2020 – 2021 session.

**Qualifications:**

Minimum of an M.A.Sc. Degree (or equivalent industry design experience) in Electrical & Computer Engineering or a related field, expertise in the field relevant to the course, and appropriate teaching experience. Previous educational background and/or experience must be suited to teaching the course described below. Candidates must have excellent communication and presentation skills, as well as be capable of working as a member of a teaching team. Prior teaching experience in project based engineering courses and lecture-based engineering courses would be a strong asset. Preference will be given to candidates who are registered as professional engineers in the province of Ontario.

**Teaching requirement:**

Fall Term Course: September 1, 2020 – December 31, 2020

Anticipated course enrolment: 100

**Course Description**

**ELEC 474 – Machine Vision**

**F 3-0.75-0.5 4.25**

Description

Computer Vision deals with the automated extraction of information from image and video data. At the low level, techniques such as histogram processing, spatial and frequency-domain filtering, motion segmentation edge extraction, and corner operators are applied as a first step. Follow this, higher level techniques such as geometric primitive extraction, and ultimately object recognition (both model-based and appearance-based) can be applied to determine the identity and accurate location of objects in images. Underlying all of these methods are underlying mathematical concepts such as Principle Component Analysis, Robust Statistics (e.g. RANSAC), and Singular Value Decomposition, as well as optimization methods, such as can be applied to determine least squares solutions to transformations following the Correspondence Problem. Applications of Computer Vision are explored in industrial settings such as automated inspection and recognition. The mathematical basis of stereovision and range vision are presented.

<https://www.ece.queensu.ca/undergraduate/courses/elec-474.html>

The above advertised course will be taught on campus. The successful applicant will have 100 percent responsibility for the course.

Queens University is committed to employment equity and diversity in the workplace and welcomes applications from women, visible minorities, aboriginal people, persons with disabilities, and persons of any

sexual orientation or gender identity. All qualified candidates are encouraged to apply; however, Canadians and permanent residents of Canada will be given priority. Teaching Fellows at Queen's University are governed by a collective agreement between Public Service Alliance of Canada (PSAC), <http://www.queensu.ca/humanresources/employees/unions.html> and Queen's University.

The University will provide support in its recruitment processes to applicants with disabilities, including accommodation that takes into account an applicant's accessibility needs. If you require accommodation during the interview process, please contact Mary Gillespie, [mary.gillespie@queensu.ca](mailto:mary.gillespie@queensu.ca).

To comply with Federal laws, the University is obliged to gather statistical information about how many applicants for each job vacancy are Canadian citizens/ permanent residents of Canada. Applicants need not identify their country of origin or citizenship, however, all applications must include one of the following statements: I am a Canadian citizen/permanent resident of Canada; OR, I am not a Canadian citizen/permanent resident of Canada. Applications that do not include this information will be deemed incomplete.

Applications should include a complete and current curriculum vitae, a statement of teaching experience, the names and contact details of two referees who may be contacted, and any relevant other materials the candidate wishes to submit for consideration. Applications can be submitted to the ECE Appointments Committee at the address below, or by e-mail to Mary Gillespie, [mary.gillespie@queensu.ca](mailto:mary.gillespie@queensu.ca). Applications should arrive no later than March 20, 2020.

Electrical and Computer Engineering Appointments Committee  
c/o Mary Gillespie, Administrative Assistant  
Department of Electrical and Computer Engineering  
Walter Light Hall, Room 416  
Queen's University  
Tel. 613 533-6000 ext. 75344  
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