Image Processing and Computer Vision

Module Information

2022.01, Approved

Summary Information

Module Code	7113COMP
Formal Module Title	Image Processing and Computer Vision
Owning School	Computer Science and Mathematics
Career	Postgraduate Taught
Credits	20
Academic level	FHEQ Level 7
Grading Schema	50

Teaching Responsibility

LJMU Schools involved in Delivery
Computer Science and Mathematics

Learning Methods

Learning Method Type	Hours
Lecture	12
Practical	24

Module Offering(s)

Display Name	Location	Start Month	Duration Number Duration Unit
SEP-CTY	CTY	September	12 Weeks

Aims and Outcomes

Aims	To provide the underpinning knowledge, concepts and principles of Computer Vision and Image Processing.To develop the expertise in Image Processing using GPGPU.To develop the expertise in Computer Vision as a tool in computer games development.

After completing the module the student should be able to:

Learning Outcomes

Code	Number	Description
MLO1	1	Critically evaluate common Computer Vision and Image Processing algorithms.
MLO2	2	Critically analyse theoretical and practical capabilities and limitation of Computer Vision.
MLO3	3	Design and implement Image Processing and Computer Vision algorithms using GPGPU.

Module Content

Outline Syllabus	Sampling and QuantizationColour TransformationSpatial and FrequencySpatial and Frequency Domain FilteringEdge detectionSegmentationObject recognitionGPGPU programming
Module Overview	
Additional Information	This module teaches the principles of image processing and its application using GPGPU in computer games, including colour transformation, spatial and frequency domain filtering and sampling. The module also covers computer vision algorithms with topics ranging from basic operations such as edge detections and segmentation to the more complex processes such as object recognition.

Assessments

Assignment Category	Assessment Name	Weight	Exam/Test Length (hours)	Module Learning Outcome Mapping
Report	Implementation	100	0	MLO1, MLO2, MLO3

Module Contacts

Module Leader

Contact Name	Applies to all offerings	Offerings
Sud Sudirman	Yes	N/A

Partner Module Team

Contact Name	Applies to all offerings	Offerings