



MODULE HANDBOOK DESCRIPTION

Module designation	<i>FAST (Features from Accelerated Segment Test) Algorithm</i>	
Code	<i>FBB0009</i>	
Semester(s) in which the module is taught	<i>7 / fourth year</i>	
Person responsible for the module	<i>A.S.Rachman, ST., MT.</i>	
Language	<i>Indonesian</i>	
Relation to curriculum	<i>Free elective for Electronics Engineering</i>	
Teaching methods	<i>lectures, small group discussion, project & case base method.</i>	
Workload (incl. contact hours, self-study hours)	Contact minutes every week, each week of the 16 weeks/semester: <ul style="list-style-type: none"> • Lectures: 3 x 50 minutes • Exercises and Assignments: 3 x 60 minutes • Self-study: 3 x 60 minutes. Total study hours = 8 hours 30 minutes/week.	
Credit points	<i>2 SKS (~3.2 ECTS)</i>	
Required and recommended prerequisites for joining the module	-	
Module objectives/intended learning outcomes	<i>1. Students are able to understanding of feature detection: FAST is a method for detecting features in images and understand how feature detection works, including how to identify corners and edges in an image.</i>	<i>PLO3 (H)</i>
	<i>2. Students are able to implement the FAST algorithm and will gain the ability to implement it in code. It will give the skills to write computer vision applications that can detect and extract features from images.</i>	<i>PLO4 (M)</i>

	<p>3. <i>Students are able to knowledge of feature descriptors: The FAST algorithm generates a set of feature descriptors that can be used to describe the features detected in an image and will learn about feature descriptors and how they can be used in various computer vision applications.</i></p>	<p><i>PLO9 (L) ; PLO2 (L)</i></p>
Content	<p>1. <i>Feature Detection using FAST</i> 2. <i>Machine Learning Approach.</i> 3. <i>Non-maximal Suppression</i> 4. <i>Limitations of the FAST Algorithm</i> 5. <i>FAST Feature Detector in OpenCV</i> 5. <i>Implementation</i></p>	
Examination forms	<p>- <i>Case based</i> - <i>Project based</i></p>	
Study and examination requirements	<p><i>The final grade in the module is composed of:</i></p> <p>a. <i>Case I assessment: 20%</i> b. <i>Case II assessment: 20%</i> c. <i>Project based: 60%</i> <i>Students must have a final grade of 65% or higher to pass</i></p>	
Reading list	<p>1. <i>Viswanathan, Deepak, 2011, "Features from Accelerated Segment Test (FAST)."</i></p> <p>2. <i>Edward Rosten and Tom Drummond, 2006, "Machine learning for high speed corner detection" in 9th European Conference on Computer Vision, vol. 1, pp. 430–443.</i></p> <p>3. <i>Edward Rosten, Reid Porter, and Tom Drummond, 2010, "Faster and better: a machine learning approach to corner detection" in IEEE Trans. Pattern Analysis and Machine Intelligence, vol 32, pp. 105–119.</i></p> <p>4. https://docs.opencv.org/3.0-beta/doc/py_tutorials/py_feature2d/py_fast/py_fast.html</p> <p>5. https://in.udacity.com/course/computer-vision-nanodegree--nd891</p>	