Errata and Updates for PM 222: *Sensor and Data Fusion: A Tool for Information Assessment and Decision Making*, 2nd Ed., L.A. Klein

p. iv: the copyright information is missing from this page. It should include:
"Copyright © 2012 Society of Photo-Optical Instrumentation Engineers (SPIE)"

p. 3: 8th line, last word on line, change "stated" to "state."

p. 74: Section 3.2.2, change 2nd sentence to read: "It contains, at the top level, the options available for (1) conducting data- or track-driven searches to update tracks and (2) correlating and associating data and tracks."

p. 75: Section 3.2.2.1, change section title to "Measurement- or track-search driven." On third line of the paragraph, add the word 'measurement' after the word 'sensor' so that it reads 'sensor measurement data'.

p. 77: In Table 3.5, the last column for Chernoff metric should read: "Generalization of Bhattacharyya distance, …" Also remove the unneeded period after the word "unequal."

p. 98: In Section 3.8, change the second paragraph to read: "One nomenclature used to describe data fusion architectures is sensor-level fusion (also referred to as autonomous fusion, distributed fusion, and post-individual sensor processing fusion), central-level fusion (also referred to as centralized fusion and pre-individual sensor processing fusion), and hybrid fusion, which uses combinations of the sensor-level and central-level approaches.[60–62] These terms reflect the extent of the data processing that occurs in a sensor, sensor output types, and the bandwidth needed to transmit the sensor outputs to a location where the fusion process occurs. An alternative fusion architecture lexicon employs the terms pixel-level, feature-level, and decision-level fusion."

p. 103: end of 1st paragraph, reference number should be 60. 2nd paragraph, last sentence, 4th word should be "architecture" and not "algorithm."

p.138: Sentence above Eq. (4-38) becomes: "Solving for the sample mean $\bar{x}$ and equating the result to –0.539 ºC gives"

p.138: Eq. (4-39) becomes $P(\bar{x} \geq -0.539|_{\mu = -0.545}) = P(Z \geq z) = 0.05$.

p.138: Sentence after Eq. (4-39) becomes: "Since the cheese-maker is concerned with the hypothesis H_0: $\mu \geq -0.53$ ºC, we must find the power of the test against the alternative $\mu = -0.53$ ºC rather than against the alternative $\mu = -0.545$ ºC."

p.138: Eq. (4-40) becomes and $P(\bar{x} \geq -0.539|_{\mu = -0.53}) = P(Z \geq z)$.

p.139: First sentence becomes: "The probability in Eq. (4-40) is calculated from the standardized sample mean test statistic z with $\mu = -0.53$ for the population mean, $\bar{x} = -0.539$ for the sample mean, and the original value of 0.008 for the population standard deviation."

p. 139: The greater than symbol (>) in the last line of Eq. (4-41) becomes a greater than or equal symbol (≥).

p. 162: Line before Eq. (5-47) should read '$\boldsymbol{\lambda}_q$ given by'.

p. 166-167: Last sentence on p. 166 and first sentence on p. 167 should read '… since the sensors are presumed to be conditionally independent. Thus, the joint …'

p.171: Third paragraph, first sentence, change to read '… are presumed to be conditionally independent. Thus, …'

p. 183: First paragraph. Insert a new sentence after the first sentence in the first paragraph: The sensors must act as independent sources when offering evidence for a proposition.

p. 200: In second line in third paragraph from bottom, change ‘5 pixels or less,’ to ‘5 pixels or fewer,’.

p. 201: Last line on page, insert “*w*” after the word “width” such that sentence reads “… the width *w* of the region …”

p. 223: After Eq. (6-100), insert the following sentence: “The normalization factor for MDS is equal to the inverse of the sum of the probability masses given by Eq. (6-100).”

p. 223: Change references on line before Eq. (6-101) to 31 from 30, and on the second line after Eq. (6-101) to 32,33 from 30,32.

p. 224: Add a new paragraph after Eq. (6-106) to read:

“The interpretation of the observers’ evidence is as follows. B is pretty sure the bird has predatory and waterfowl attributes as he assigns a combined probability mass of 0.8 to that conclusion. He is uncertain about the nocturnal or diurnal nature of the bird, but is leaning toward nocturnal. B_1 is pretty sure the bird is nocturnal and also social. B_2 is pretty sure the bird is predatory, but uncertain about it being waterfowl and hedges it might be a land bird. B_3 provides no information about the numbers of birds with specific attributes. B_4 provides information that contradicts that of B and B_1 about the bird’s predatory nature, confirms the land attribute, but is unsure about the social quality.”

p. 225: In the second paragraph, add two new sentences after the existing first sentence to read: “The number of birds with combined $T \cap S_{soc}$ attributes is 1. This follows from the given knowledge that $N(T) = 1$ and the inference that B_1 has simply observed another characteristic of this bird.”

p. 228: On the third line from the top, change ‘the value 0.358, almost identical to the ODS’ to ‘the value 0.385, identical to the ODS’

p. 228: In Table 6.33, the row 3, column 2 entry becomes

$$m(S_{non} \cap S_{lnd} \cap S_{sol}) = (0.06)\,[(n_2)/(30)(n_2)] = 0.002$$

p. 228: The values of the non-zero entries of the inner elements of Table 6.34 change as shown below:

$m_B(T) = 0.5$	$m(\phi) = 0$	$m(\phi) = 0$	$m(T) = 0.385$
$m_B(T') = 0.3$	$m(\phi) = 0$	$m(\phi) = 0$	$m(T') = 0.230$
$m_B(\Theta) = 0.2$	$m(S_{non} \cap S_{lnd} \cap S_{sol}) = 0.115$	$m(S_{non} \cap S_{lnd} \cap S_{bth}) = 0.115$	$m(\Theta) = 0.155$
	$m_{B4}(S_{non} \cap S_{lnd} \cap S_{sol}) = 0.3$	$m_{B4}(S_{non} \cap S_{lnd} \cap S_{bth}) = 0.3$	$m_{B4}(\Theta) = 0.4$

p. 233: Section 6.8, Summary. First sentence of paragraph is replaced by: “The Dempster–Shafer algorithm allows sensors or information sources, whose outputs are independent of each other’s, to contribute information to the extent of their knowledge.”

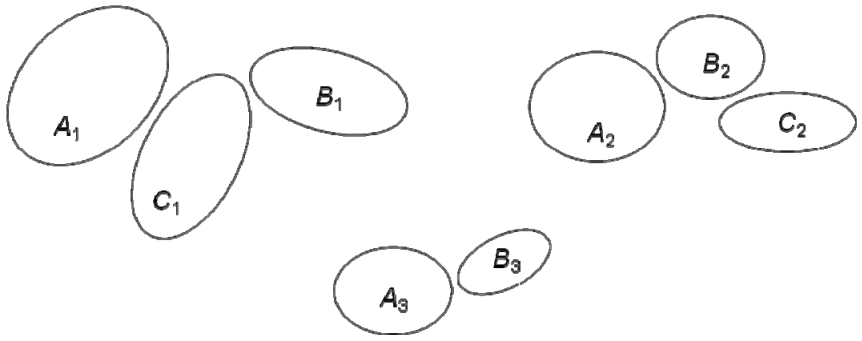
p. 275: At the end of the first sentence, add the following sentence: “This technique is most effective when the sensors act independently of each other when offering a target report.”

p. 276: In first paragraph of Section 8.2.2, delete ‘the Venn diagram of’ from the second sentence.

p. 276: First two bullets of Section 8.2.2 should read:

- Degree of matching of sensor output data (e.g., signals or imagery) to the features of the sought-after targets;
- Number of preidentified features that are matched to some degree by the sensor output data; or

p. 277: Figure 8.3 should appear as follows:



p. 283: Third paragraph, line 9: the phrase “subsequent benefits of the signal processing algorithms” should be replaced with “subsequent application of the signal processing algorithms that seek to identify features on the detected objects that correspond to those of the targets of interest”.

p. 303: Line 7: Added the word ‘consequent’ so that the line now reads: ‘triangles or trapezoids) and the number of library consequent fuzzy sets is limited’

p. 369: Line after Eq. (10-134): Replace “2D and 3D” by “two-component state and three-component state”

p. 373: Line after Eq. (10-151): q is the variance of $w(t)$, and δ is the Dirac delta.

p. 374: Line after Eq. (10-157): Delete “discrete-time” and change “Eq. (10-36)” to “Eq. (10-153)”

p. 381: Insert an uppercase 21 at the end of the line that appears before Eq. (10-191) to indicate a new reference: A. Wald, “Sequential tests of statistical hypotheses, “*Annals of Math. Stat.,* **16**(2), 117–186 (Jun. 1945).

p. 397: The paragraph following Table 10.10 should be reduced to one sentence that reads: “Implementation examples of the architectures depicted in Figures 10.15 through 10.20 are listed in Table 10.10.”

p. 431: Reference 2: The volume number for the Knapp and Carter reference is **24,** not **A.**

p. 451: Add additional definition of symbols explanations to the line following Eq. (C-2) such that it reads: where **q** is the state, **x** is the input or forcing function, **y** is the output behavior of interest, and **A, B, C, and D** are constant matrices.