Errata

Fundamentals of Communication Systems

John G. Proakis and Masoud Salehi

First Edition, Prentice-Hall, 2005

Revised May 7, 2005

Please report errors to salehi@ece.neu.edu

Page	Location	Incorrect	Correct
cover	Figure on cover	see changes to Figure 13.29 on page 801 below.	
ix	line 7 from bottom	Communicationxs	Communications
10	line 6	encoder	decoder
043	Figure 2.23	$x(t \to t_0)$ and $y(t \to t_0)$	$x(t - t_0)$ and $y(t - t_0)$
043	line 12	$y(t)$	$y(t_0)$
063	last line	dt	df
113	line 10	$x_2(t)$	$x_5(t)$
113	line 11	$x_3(t)$	$x_6(t)$
113	line 12	$x_4(t)$	$x_7(t)$
113	line 13	$x_5(t)$	$x_8(t)$
113	line 14	$x_6(t)$	$x_9(t)$
113	line 15	$x_7(t)$	$x_{10}(t)$
113	line 16	$x_8(t)$	$x_{11}(t)$
113	line 17	$x_9(t)$	$x_{12}(t)$
113	line 6	$x(t)$	$x_1(t)$
113	line 7	$x(t)$	$x_2(t)$
113	line 8	$x(t)$	$x_3(t)$
113	line 9	$x_1(t)$	$x_4(t)$
204	Eq. 4.6.1	$0 \leq t \leq \frac{T_m}{2}$	$0 \leq t < \frac{T_m}{2}$
232	Fig. 5.13	$x(t : \omega_1), x(t : \omega_2), x(t : \omega_3)$	$x(t; \omega_1), x(t; \omega_2), x(t; \omega_3)$
233	Fig. 5.14	same corrections as for Figure 5.13 given above	
236	Definition 5.2.4	Replace the definition with: Two random processes $X(t)$ and $Y(t)$ are *independent* if for all positive integers m, n and for all $t_1, t_2, \ldots, t_n$ and $\tau_1, \tau_2, \ldots, \tau_m$, the random vectors $(X(t_1), X(t_2), \ldots, X(t_n))$ and $(Y(\tau_1), Y(\tau_2), \ldots, Y(\tau_m))$ are independent. Similarly $X(t)$ and $Y(t)$ are *uncorrelated* if the two random vectors are uncorrelated.	

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Page	**Location**	**Incorrect**	**Correct**
258	Problem 5.16	$E(X)$	$E[X]$
258	Prob. 5.18, part 5	?	.
258	Prob. 5.18, part 8	$E(X\|X+2Y>1)$	$E[X\|X+2Y>1]$
264	Problem 5.46	$R_X(0)R_Y(0)$	$\sqrt{R_X(0)R_Y(0))}$
291	Equation 6.2.25	β	β_f
307	Figure 6.16	$s(t)$	$r(t)$
315	line after Eq. 6.5.28	Change the two $\mathcal{G}$'s to $\mathcal{G}_a$'s	
315	Figure 6.21	$\mathcal{G}$	$\mathcal{G}_a$
317	line 13	267 dB	267 dBW
335	last line	$E(X-Q(X))^2$	$E[(X-Q(X))^2]$
337	Eqs. 7.2.3–7.2.5	Change all $E()$ to $E[]$	
337	line 3 from bottom	$1 \leq i \leq N-1$	$1 \leq i \leq N-2$
339	Eq. 7.2.11	$\frac{\partial}{\partial \hat{x}_i}$	$\frac{\partial D}{\partial \hat{x}_i}$
367	Caption of Fig. 7.26	encoder.	encoder (a) and decoder (b).
375	Problem 21	...amplitude of this process is 6.	...amplitude of this process is 600.
423	after Eq. 8.4.38	for all n	for all k
425	after Eq. 8.4.47	change "Since $n'(t)$ and ...." to "this means $n'(t)$ and r_k are uncorrelated because $n'(t)$ is zero-mean. Since $n'(t)$ and ...."	
437	line 5	$\binom{n}{k}$	$\binom{k}{n}$
437	Eq. 8.5.20	$\binom{n}{k}$	$\binom{k}{n}$
442	Eq. 8.5.41	$\cdots e^{-v^2/2}\,dv$	$\cdots \frac{1}{\sqrt{2\pi}} e^{-v^2/2}\,dv$
446	line 14	$m(t-\delta T)$	$m(T-\delta T)$
446	line 14	$m(t+\delta t)$	$m(T+\delta T)$
458	Problem 8.8	$0 \leq 1 \leq T$	$0 \leq t \leq T$
462	Problem 8.21	$0 \leq 1 \leq T$	$0 \leq t \leq T$
462	Problem 8.21	$\frac{T}{2} \leq 0 \leq T$	$\frac{T}{2} < t \leq T$
479	line 3	$\mathrm{sinc}\pi f T$	$\sin \pi f T$
479	line 4	$\mathrm{sinc}\pi f T$	$\mathrm{sinc}\, f T$
485	Eq. 9.2.10	dt	df
548	Fig. 8.39	$\times$ above $\{z_k\}$	$+$
518	Fig. 10.8	remove the three top arrows and the text above them	
558	Eq. 10.2.23	$\cdots + \frac{1}{2}n_c(t)\cdots$	$\cdots - \frac{1}{2}n_c(t)\cdots$

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Page	**Location**	**Incorrect**	**Correct**
572	Eq. 4.5.80, line 1	$\cdots + A_{ms}\sqrt{\mathscr{E}_b}\cdots$	$\cdots - A_{ms}\sqrt{\mathscr{E}_b}\cdots$
572	Eq. 4.5.80, line 1	$\cdots + n_c \sin\hat{\phi} - n_s \cos\hat{\phi}$	$\cdots + n_c \cos\hat{\phi} + n_s \sin\hat{\phi}$
572	Eq. 4.5.80, line 2	$\cdots + n_c \sin\hat{\phi} - n_s \cos\hat{\phi}$	$\cdots + n_s \cos\hat{\phi} - n_c \sin\hat{\phi}$
591	line 12 from bottom	whose frequency is	whose phase is
596	line 1	$\pm 3\pi/M$	$\pm 3\pi/4$
601	last line	CPFSK	CPM
602	Fig. 10.43 caption	CPFSK	CPM
622	line 4	$y_{1s} = \sqrt{\mathscr{E}_b}\cos\phi + n_{1s}$	$y_{1s} = \sqrt{\mathscr{E}_b}\sin\phi + n_{1s}$
658	Eq. 11.3.10	replace all R_b's with R's	
659	Eq. 10.3.14	replace all () with []	
660	line 4 from bottom	$E(c_n c_m)E(\nu_n \nu_m)$	$E[c_n c_m]E[\nu_n \nu_m]$
660	Eq. 11.3.21	replace $E(\nu_n^2)$ and $E(\nu^2)$ with $E[\nu_n^2]$ and $E[\nu^2]$, respectively	
661	Eq. 11.3.24	$E(\nu_n)$	$E[\nu_n]$
661	Eq. 11.3.25	$E(\nu_n^2)$	$E[\nu_n^2]$
675	Fig. 11.26	8, 577	8×577
676	Fig. 11.27(b)	A/O	A/D
679	line 10 from bottom	data is	data are
731	Eq. 12.5.9	$\leq$	$\rightarrow$
731	Eq. 12.5.10	$\leq$	$\rightarrow$
743	line 4 from bottom	$= p(x)p(y)p(z\|x, y)$	$= p(x)p(z)p(y\|x, z)$
749	line 11	change to: $\boldsymbol{p} = \left\{\frac{1}{2}, \frac{1}{4}, \frac{1}{8}, \frac{1}{16}, \frac{1}{32}, \frac{1}{64}, \frac{1}{128}, \frac{1}{256}, \frac{1}{256}\right\}$	
758	Eq. 13.2.3, 13.2.4	n	k
760	Eq. 13.2.14	$\boldsymbol{I}_k$	$\boldsymbol{I}_{n-k}$
767	line 2 after Eq. 13.2.28	2^{n-k}	$n - k$
767	same line as **Solution**	polynomial	matrix
779	line 9	$X_b = DJX_d + DJX_b$	$X_b = DJX_d + DJX_c$
796	Eq. 13.4.14	$\gamma_i(s', s)$	$\gamma_{i+1}(s', s)$
801	Figure 13.29	delete the connection from the second square from right to c_{10} and draw a new connection from it to c_{11}.	
814	Fig. 10.15 (b)	an arrow should substitute the line connecting the "parallel to serial converter" block to the "Viterbi decoder" block.	
819–826	problem numbers	decrease all problem numbers by 2	

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Page	Location	Incorrect	Correct
822	line 8	$N \leq n$	$N = n$
823	last line	P-13.16	P-13.14
823	line 5	P-13.15	P-13.13
823–824	figure numbers	decrease all figure numbers by 2	
824	line 11	Problem 13.13	Problem 13.11
824	line 15	Problem 13.13	Problem 13.11
824	line 21	P-13.12	P-13.18