

	T, 40, 210 (2) 1 1 1 A 2 200 mb 2000
	T; ud N(A, 62) where both t, 02 are unknown sample from A(02/x)?
	Descripte tron H(O 1x)
1 2011	1) 1-9 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
	$P(\theta, \delta^{2} \mid X) = P(\theta \mid X, \delta^{2}) P(\delta^{2} \mid X)$ $= (N(\overline{X}, \delta^{2}/n)) \left(\text{Inv Gammo} \left(\frac{n-1}{2}, \frac{(n-1)5^{2}}{2} \right) \right)$
	(1) Po (4,62) x 1/62
1000	$(n-1)(n-1)s^2$
	$= (N(\bar{x}, 0/n)) (ln v Gammo / \frac{1}{2})$
	reclization
	11 100 1000 1200 000 1200 1
(10.30.00)	How would & sample < A, 6' > from P(A, 6' x)
	1 4 7 7 7 7
	Step 1: Draw a bomp realization from P(6'1x) using rinvaamma (n-1/2, (n-1)s'/2)
	some a sea looker a Osamp reolization from roll is using
	rinvgomma (n-1/2 (n-1/5/2)
A 7.12.	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
KOD IALO	Step 1: Draw a A somp realization from P(AIX, 6= 0 samp)
	using morm (x, Josep/n)
	2
	return (+ samp, 6 samp) To sample n realizations, repeat n times
	How to sample from P(x,1x) = Tn-, (x, In+15)?
and the Control of th	rt. scoled (n-1, x, Jan s)
	rt scored (11-1) x, J-n 3)
topendance	Stopulas ata (= samply und anall + 1 b, 6/1 14
1	$D(x_1x) = \int P(x_1, \theta, \theta^2 x) d\theta^2 d\theta$
7339	$P(X, X) = \int P(X, \theta, 6^2 X) d6^2 d\theta$
- I A SELECTION	The state of the s
	then model is cogniciate
	$= \left(P(x_* \mid \theta_1 6^2) P(\theta_1 6^2 \mid x) d 6^2 d \theta \right)$
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process of the second second second	2A 78.
	1 1 to toda
	= $P(x, \theta, \delta^2) P(\theta x, \delta^2) P(\delta^2 x) d\delta^2 d\theta$.
	() b) Jo2 1 1 1 1 2 (0) 1 2 (0) 1 (0) 9 = (0 , 0) 9
	(of go eccor) and (or other property of the control of the contr
	The state of the s
	A CONTROL OF THE PROPERTY OF T

* 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	How to sample from P(X., +, 62/X)?
	Sample of samp from $P(\delta^2 x)$ via rinvgamma $\left(\frac{n-1}{2}, \frac{(n-1)S^2}{2}\right)$
	Sample Asamp from PCAIX, 8= 8 samp) via rnorm (x, 162 samp)
	Sample X. samp from P(X.10 = 0 samp, 6 = 6 samp) via rnorm (to comp, 6 samp) return (X. samp, to samp, 6 samp)
	=
(0 - 0	To sample from P(X. X) you comple from P(X, 0, 6° X) and ignore & samp, 5° samp to leave you with X, samp.
garath a	To sample n realizations, repeat n times
	P(+, 62 x) x P(+ x, 62) P(52 x) = Norm Pro Gramma due to
Norm Inv Gam	If $P(\theta, \delta^2) \neq Nom Pnv Gamma \Rightarrow non conjugate dependence and a P(\theta, \delta^2) = P(\theta \delta^2) P(\delta^2) where P(\theta \delta^2) = N(\theta, \delta^2) P(\delta^2) = N(\theta, \delta^2) P(\delta^2) P(\delta^$
	then model is conjugate. Div Gamma (1/2) 100/2)
	What if.
	$P(\theta, \delta^2) = P(\theta) P(\delta^2) \text{ where. } P(\theta) = N(lo, \tau^2), P(\delta^2) = 2m Gamma$ $ \frac{(n_0/2, n_0 \delta_0^2/a) \cdot 1 \cdot 1^2 + \delta^2/n_0}{(n_0/2, n_0 \delta_0^2/a) \cdot 1 \cdot 1^2 + \delta^2/n_0} $

0.002	(20/20	Lecture so
	$\Rightarrow p(\theta, 6^2 x) \propto p(x) \theta$	ρ , ρ^2) $\rho(\rho, \rho^2)$
A Company of the Comp		19 (x 3/4)0 x (x 1 a -a)01
	= $P(X \theta, \theta') P(\theta) P(\theta')$	$) \propto k(x \theta, \delta^2) k(\theta) k(\delta^2)$
	= ((02) = 1/03 ((n-1) 5 + 1	$(x-\theta)^{-1}$) $\left(\begin{array}{cccccccccccccccccccccccccccccccccccc$
phomir	$\frac{-n+n_0}{2}$ -1 - $\frac{y_1}{20}$ ((n-1)5 ² +	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
	= (6)	$e^{a\theta-b\theta^2} = e^{a\theta-b\theta}$
morphices by	-n+no -1 -y , ((n+1) s2+n	8 ² +p.6 ²)(
	$=(6^2)$	$\sqrt{\frac{1}{2}} + n_0 6^2 \left(\sqrt{\frac{2}{2}} + n_0 6^2 \right) \left(\sqrt{\frac{2}{2}} + n_0 6^2 \right$
YHINA.	- n+no -1] - 1/3 ((n-1)52+	$n\bar{x}^2 + n \cdot (\frac{1}{2})$
	x(6°) 2 e (11-1)3 F	$(\frac{1}{26^2}, \frac{1}{2\tau^2}) = (\frac{1}{2}, \frac{1}{2}, \frac{1}{2})$
	K(o21X), the kerno	1 of some unknown
0	distribution and we do draw realization from	1 know how to. $\left(N\left(\frac{n^{\frac{1}{2}}}{\delta^{2}}, \frac{1}{\tau^{2}}, \frac{1}{\tau^{2}}\right)\right)$
		P(0/6,x)
		(0,0,0)
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= Oce	as about and another	DIV (1,0) U moil 1 world (IP)
11/5 (x1-0)	45 9 9	
		Sample from this posterior
	endunce been out (x)	20) A count garage 2005 () (1)
	X, S = O seemy)	Tarra A A
	A. WEST SEE SU TO SEE	1 t) ? mad grow & soul (e)
	\ 9	(3) Seduce S. B. semp & son