Perhaps Title of section: ~~Probabilistic~~ Conditional Probability Distributions.

(285.22 speci) (282.00–.23): Start out by deriving d funcs, s-funcs:

That there is only one way to express D-funcs. (~~...~~)

(well no: say $x = f(t)$, $y = f(t)$ implies $y(x)$ but can be many valued i.e. not a function.

For S-funcs there are ~~many~~ several ways to express them;

1)

AZ (of alpha)
~~...~~ Can ~~...~~ assign pc's to any funct of k variables.
How different from Condl. pd?

$P(X,Y)$ v.s. $P(Y|X)$
?
$P(\vec{X} \to Y)$

SN AZ can assign a pc to any funct of a vector (k vars, k scalars)

$(Y = F(X))$ ← AZ assigns pc to this. This is a ~~...~~ pd that is fixed by choice of primitives & formalisms of pc assignment. I want to be able to try various possl. pd's on all $Y = F(X)$'s. By adding just 1 more input, (essentially "R" random) we get a (perhaps) universal s-funct. Consider ~~scalar~~ funct of a scalar. $y = F_i(x)$. We have in AZ, a fixed pd on all such F_i. Here, in $y = F_i(X, R)$ the function depends on R and the pc of y depends on the (AZ assigned) pc of F_i mult by $2^{-|R|}$.

In AZ, the legal R (in fact, any input) must be a prefix set, so I can tell where that input ends. A "stop" symbol is a common way to end — but ~~...~~ does this really give the pd that I want?

SN Looking at §2.1 "imposed updating and search techniques ~~...problems~~" (in FDSIA report)

It starts out looking for a Lsrch soln. — Also ◦ Section §3 does same.

Try this: On p 14, after eq (7) a $\prod(h)\prod(1-h)$

"When we find a suitable . . . . . . at time t."

26 This O' becomes part of the updated GCPD (General Conditional probability distribution) and can be used to guide Lsearch.

(14 search at 14.20)

~~...~~ While it is, indeed, possible to run an Lsearch in this way, we will describe a search technique that ~~...~~ seems to be much faster ~~...~~ ~~...~~ than Lsearch.

SN Section on "Updating" now out!
Spending ½ time on updating & ½ time searching is perhaps not so clever in WON! — looking this!

Continue on: p 14 Given a problem, $(\tilde{G}_n, \alpha)$ . . .

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32 Changes needed in §3.1 (OZ probs) [change Name of §2.1

(inscripts) we want to find O^2's such that

33 $$a_0^2 \prod_{j,l} O^2(G^{j,l} \mid \tilde{G}_j, t_j, F_l)$$

is as large as possible:

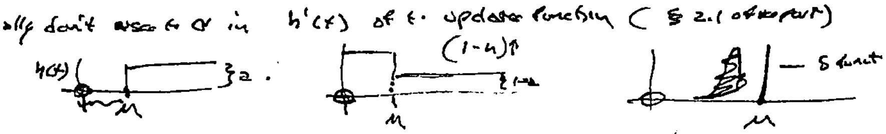
$(\tilde{G}_j, t_j)$ describes the j^{th} optimization problem, to find, in time t_j, an x such that $\tilde{G}_j(x)$ is as large as possible. (in view of O^2)

$O^2(G^{j,l} \mid \tilde{G}_j, t_j, F_l)$ is the probability density ~~...~~

8.02.03
N.B.

30 : I want to discuss how s-functs are to be realized in QATM!
Have new section on "Stochastic Functions".
Do two examples of a 3 param ∩ h'(t) curve as a way to get a s-funct from a 3 output d-funct. In section A [2.1] much improved update technique.
[redacted] refer to this section for examples.

SN: Since I really don't use σ in h'(x) of the update function (§ 2.1 of report)
why not use σ = 0

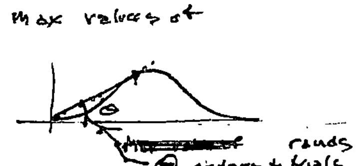


would I get φ pc for some cases?
0 I would! For h' I would almost allways get p=φ except for when $t^{me}=\mu$ at which point done it.
So it looks like I will have to model σ, even tho I don't care about its value — it does
.13 contribute much to "Goodness of fit".

So while Eq (1) p5 is correct, Appendix A tells how to get apps of d functs, not the stoch. of eq(1). h
We can start our TSQ w. d.functs (MTM TSQ), but eventually, we will want to work on s.functs. At one time I thot that it was necessary to get TM to do
0 produ. of s functs — [struck out] so it could do ordering. But recently, its become clear that ordering can be done w. pure d-functs. I still don't have a (good clear) idea how to construct vector outputs of functions, using economical codes, so all vector component functions
23 share code costs. → 288.00

(N.B.) GHI-I assumes (that pc/cc ordering is optimum) assumes the pc's are uncorrelated
i.e. that knowing one trial fails, leaves other pc's invariant. The
[redacted] rec optimization of the $\sum_{i=0}\Pi O^i(QA)$ takes advantage of correlns betw the cands.

In WON / GHI, the ordering of the h's is by max values of
0 $\tan(\theta)=\frac{h'(t)}{t}$ . . Each h' has a t value so this is max.
the largest θ for a cand, becomes its "ordering index"



If we then dedicate trial to extend out to that max θ pt. and stop, then
then pc/cc obtaind is exactly right, for the GHI! The only part that causes it
to fail, is the correlns of the pc's of the cands.

We say "suggests" because the doubling house theorem assumes that success probabilities of the trials are uncorrelated — i.e. when one trial fails, the success probabilities of other trials do not change. In our update scheme, we will take advantage of these correlations [struck out] to speed up our search.