

IN THE UNITED STATES DISTRICT COURT  
FOR THE DISTRICT OF DELAWARE

PERSONALIZED USER MODEL, L.L.P.,	)	
	)	
Plaintiff,	)	
v.	)	
	)	C.A. No. 09-525 (LPS)
GOOGLE, INC.,	)	
	)	<b>REDACTED - PUBLIC VERSION</b>
Defendant.	)	
_____	)	
GOOGLE, INC.,	)	
	)	
Counterclaimant,	)	
	)	
v.	)	
	)	
PERSONALIZED USER MODEL, L.L.P.	)	
and YOCHAI KONIG,	)	
	)	
Counterclaim-Defendants.	)	

**PUM’S REPLY BRIEF IN SUPPORT OF ITS MOTION TO EXCLUDE  
PORTIONS OF DR. EDWARD FOX’S NON-INFRINGEMENT REPORT FOR  
FAILURE TO APPLY THE COURT’S CLAIM CONSTRUCTION**

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## I. INTRODUCTION

Under the guise of noninfringement, Google and Dr. Fox try to reconstrue the claims. Google concedes as much, arguing that PUM should not be able “to prevent Google’s noninfringement expert from *interpreting the claims* in the same manner as PUM’s validity expert.” Opp., D.I. 576, at 2 (emphasis added). Claim interpretation, however, is reserved for the Court. The Court rejected Google’s attempt to require that the “User Model specific to the user” and “user-specific learning machine” be “unique,” “restricted,” or the newly-minted “exclusive”<sup>1</sup> to the user. (D.I. 347, at 27) (noting that “Google’s use of the word ‘unique’ is inconsistent with the patent’s specification”). Nonetheless, throughout his report Dr. Fox opines that each user must have his “own” model (*e.g.*, the butler and car hypotheticals in paragraphs 318 and 319 of the Fox Report). The Court should reject this already-decided argument and exclude the portions of the Fox Report that rely on it.

Dr. Fox’s opinions regarding the “estimating” limitations also fail to follow the Court’s claim construction. During claim construction, Google argued that “estimating” is limited to calculating. The Court disagreed and found the term to be broader. The Court did not state that estimating could *not* be satisfied by a calculation; only that the term is not limited to calculation, as Google had argued. (D.I. 347, at 32-33). Dr. Fox’s report ignores that finding, stating “[t]he Court explicitly rejected that ‘estimating’ could be met by a calculation.” *E.g.*, Fox Report ¶¶ 290-292, 498, 521 (Ex. 1, to D.I. 557). Google now tries to salvage Dr. Fox’s opinions by arguing that “estimating” precludes “precise” calculations. Opp. at 8-10. But that is not what Dr. Fox’s report states; Dr. Fox does not analyze the “precision” of the accused calculations.

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<sup>1</sup> See, *e.g.*, Fox Report at ¶¶ 318 and 319, attached as Ex. 1 of the Bennett Declaration (D.I. 557).

Regardless, however, Google’s “precision” argument is not based on the Court’s construction which did not impose any sort of “precision” requirement on the claims— “‘estimating’ means ‘approximating or roughly calculating.’” (D.I. 348, at 2). The claim language that is being referred to is “estimating” the “parameters” of a learning machine and of the “probability” that the user is interested in a document. These values, regardless of precision, are estimates (*i.e.*, approximations or rough calculations) because they utilize observed information in an attempt to predict values that by their very nature are not knowable with 100% accuracy (*e.g.*, the user’s interest in an unseen document). Dr. Fox’s attempt to manufacture a non-infringement argument by misapplying the Court’s construction should be rejected. The Court should exclude Dr. Fox’s opinions that rely on this incorrect construction.

Lastly, Google attempts to confuse the issues by citing to PUM’s expert reports, depositions, and the reexaminations. But the only issue raised by PUM’s Motion was whether Dr. Fox correctly applied the Court’s claim construction. PUM’s expert reports, expert depositions, and reexamination filings are not germane to whether *Dr. Fox’s* opinions are based on the Court’s construction. Moreover, as set out below, these PUM materials are not inconsistent with the Court’s claim construction.

## **II. THE COURT ALREADY REJECTED DR. FOX’S CONSTRUCTION THAT THE USER MODEL MUST BE “SEPARATE,” “EXCLUSIVE,” OR “HIS OWN”**

### **A. The Court Addressed the Dispute Regarding the “Specificness” Issue.**

Google incredibly argues that “the Court did not squarely address whether the User Model [or user-specific learning machine] needed to be user specific in the corresponding construction.” *Opp.* at 7 n.4. To the contrary, the Court acknowledged there was a dispute regarding “specific” and resolved it in PUM’s favor. The Court rejected the notion that

“specific” means that each user must have his “own” user model or learning machine. For starters, the Order acknowledged that the parties disputed the meaning of “specific”:

The crux of the dispute is what the patent means when it says “specific” or “specific to the user.” (Tr. at 61) To resolve this dispute, the Court must determine (1) whether the User Models must be “unique,” as Google suggests and (2) whether the User Model must be stored in a data structure.

D.I. 347 at 24-25. The Court also stated, “Resolution of this dispute turns on whether a User Model is specific because it has completely different *variables* than other User Models, or if, instead, a User Model is specific because it has completely different *numerical values* than other User Models.” *Id.* at 26 (underlining added).

Google fails to explain how the Court nonetheless failed to address the “specificness” issue. Google’s counsel, in fact, argued the exact issue that Dr. Fox now attempts to re-raise: “And this really is the crux of the dispute. What our construction provides is that each individual user has their own user model. I have a user model. You have a user model. Other people, they each have their own user model.” (Hr’g Tr., D.I. 170, at 61, Jan. 11, 2011 (emphasis added).) Page 61 is the same page the Court cited in rejecting Google’s construction. (D.I. 347, at 24). Google also ignores the Court’s discussion of the specification addressing this issue: “Prototype users, and the fact that a User Model can be initialized without any user-specific information, undercuts Google’s argument ... Google’s attempt to harmonize this embodiment of the patent with its proposed construction was unpersuasive.” (D.I. 347, at 26).

Dr. Fox nonetheless advances the very argument the Court rejected, asserting that “the claim requires that each user have his *own* User Model, *i.e.*, a User Model *specific* to the user.” (D.I. 557, at ¶ 318). Google does not even try to distinguish Dr. Fox’s argument from Google’s rejected construction, and instead ignores the transcript citation entirely. And Google does not—because it cannot—argue that there is any difference between the “separate,” “exclusive,” or

“own” requirements set forth in Dr. Fox’s report and Google’s previously rejected “unique” and “restricted to” claim construction arguments.

Google’s citations to Dr. Fox’s report, moreover, demonstrate that Dr. Fox is performing claim construction, rather than applying the Court’s construction. Google cites the part of the report that states, “The *plain language of the claims requires* that each user have his *own* User Model.” Opp. at 5 (first emphasis added). Not only is that wrong, but more importantly, the Court’s construction of the disputed term—not the “plain language”—controls. Google also argues that Dr. Fox should be allowed to “interpret[] the claims in the same manner . . .” Opp. at 2. But claim construction is for the Court.

Lastly, Google argues that “PUM’s motion miscasts the Court’s *Markman* Order as somehow ruling that there need be no user-specificity at all.” Opp. at 4. That is incorrect. The Court’s construction, which PUM’s experts apply, requires the User Model be “specific” to the user (and that there be a “user-specific” learning machine (‘276 patent)). As was explained during claim construction, it is the parameters estimated from the user-specific data files that make the User Model/learning machine “specific” to the user. (D.I. 170, at 117:7-119:23). Dr. Fox’s contrary opinions should be stricken.<sup>2</sup>

#### **B. Google Cites Irrelevant Evidence to Confuse the Issue.**

Trying to distract the Court’s attention from the issue—whether Dr. Fox followed the Court’s claim construction—Google cites to PUM’s expert reports, expert depositions, and a reexamination response. Opp. at 7-8. Although irrelevant to the propriety of Dr. Fox’s opinions,

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<sup>2</sup> See, e.g., *Cook Inc. v. Endologix, Inc.*, No. 1:09-cv-01248-TWP-DKL, 2012 WL 3886204, at \*3 (S.D. Ind. Sept. 6, 2012); see also *MarcTec, LLC v. Johnson & Johnson*, No. 07-CV-825, 2010 WL 680490, at \*4 (S.D. Ill. Feb. 23, 2010); *Saffran v. Johnson & Johnson*, Civil Action No. 2:07-CV-451, 2011 WL 197871, at \*3-4 (E.D. Tex. Jan. 20, 2011); *Insight Technology, Inc. v. SureFire, LLC*, 2009 WL 3242557, \*1-\*2 (D.N.H. 2009).

none of these materials are inconsistent with the Court’s construction. For example, Google quotes (out of context) paragraphs 246 and 373 of the Carbonell report. Opp. at 7. But those paragraphs are not directed to “User Model specific to the user.” Instead, Dr. Carbonell addressed the claimed requirement that parameters are estimated from user-specific data files: “Joachims does not teach estimating parameters of a learning machine wherein the parameters are estimated in part from the *user-specific data files*” (Google Ex. 2 ¶ 373 (emphasis in original)); and “this limitation requires that the *parameters* be based in part on the user-specific data files” (Google Ex. 2 ¶ 246 (emphasis in original)). Similarly, the reexamination responses both addressed “parameters of a learning machine estimated from *user-specific data files*.” (Sistos Decl. Ex. 7 at 19 (emphasis in original); *see also* Sistos Decl. Ex. 8 at 22-23.)<sup>3</sup>

The expert depositions do not help Google either. Opp. at 7-8. Both Dr. Pazzani and Dr. Carbonell stated that some of the data must be specific to the user. Sistos Ex. 5 at 264:16-265:3; Sistos Ex. 4 at 39:18-40:14. But that is not what Dr. Fox is saying. He is saying that the variables—not the data—must be specific to the user, and the Court rejected that argument.

### **III. THE COURT SHOULD EXCLUDE DR. FOX’S OPINIONS THAT “ESTIMATING” CANNOT BE SATISFIED BY A CALCULATION OR COMPUTATION**

#### **A. Google Ignores the Statements in Dr. Fox’s Report**

Google’s opposition ignores the Fox Report. PUM’s Motion identified 22 paragraphs from the Fox Report that argue that estimating cannot be satisfied by “calculating” or “computing.” Mot., D.I. 556, at 8-9. Google’s Opposition only cites to two of those paragraphs and does not address the specific language in any of them. Opp. at 2, 8-10. Instead of addressing the Report, Google argues that “PUM relies on a number of out-of-context quotes.”

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<sup>3</sup> In addition, the 2011 reexamination responses — which are irrelevant to this litigation — pre-date the Court’s 2012 claim construction.



Opp. at 9. There is nothing out of context—a heading in the Report states that “**E. Calculating is not estimating.**” (D.I. 557, Ex. 1, Page 133 (emphasis in original)). The remainder of Fox’s contains similar statements as set forth in the table below.

ASSERTION IN GOOGLE’S BRIEF	QUOTES FROM DR. FOX’S REPORT <sup>4</sup>
<p>PUM also argues Dr. Fox’s opinions as to the terms “estimating parameters of a learning machine” and “estimating a probability that a document is of interest to user” should be excluded because he supposedly opines that estimating “excludes” calculating. <b><i>But Dr. Fox advances no such opinion.</i></b> (Opp. at 2 (emphasis added).)</p>	<p>The Court explicitly rejected that “estimating” could be met by a calculation (¶ 290)</p> <p>The Court explicitly rejected that “estimating” could be met by a computation (see above). (¶ 292)</p> <p>[REDACTED]</p> <p>and the Court explicitly rejected construing “estimating” as “calculating.” (¶ 405)</p> <p>[REDACTED]</p> <p>and the Court explicitly rejected construing “estimating” as “calculating.” (¶ 464)</p> <p>[REDACTED]. . . . The Court explicitly rejected that “estimating” could be met by a computation . . .” (¶ 498)</p> <p>[REDACTED] and the Court explicitly rejected construing “estimating” as “calculating.” (¶ 521)</p> <p>[REDACTED] As disclosed above, the Court’s constructions interpret this phrase as “approximating or roughly calculating values or weights.” Dr. Pazzani asserts that the scores associated with the categories are the “values or weights” required by the claim language. (Pazzani at 238.) But those values are <i>computed</i> via the equations cited on page 238 in Dr. Pazzani’s report.</p>

<sup>4</sup> All citations are to the Fox Report (D.I. 557, Ex. 1). All alterations and emphasis are in the original.

	<p>(¶ 547)</p> <p> and the Court explicitly rejected construing “estimating” as “calculating.” (¶ 561)</p> <p>Rather, all of the alleged parameters are <u>calculated</u>, which the Court explicitly rejected as a construction for “estimating.” (¶ 656)</p> <p>As discussed above, <u>computing</u> a weight is insufficient to <u>estimate</u> a parameter under the Court’s constructions. (¶ 661)</p>
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Trying to spin the Report, Google cites to Fox’s deposition testimony and attempts to recast the argument by focusing on the “preciseness” of the number that is the result of the estimation. Opp. at 9-10. But none of the quotes cited above state that estimating is not satisfied because the result is too “precise.” Dr. Fox, in fact, did not argue non-infringement based on the purported “precision” of Google’s estimates. Instead, he makes the blanket statement—repeatedly—that calculating/computing cannot be estimating. Period. These opinions are based on the incorrect premise that “[t]he Court explicitly rejected that ‘estimating’ could be met by a calculation.” (Fox Report ¶ 290) But the Court made no such finding. The Court simply held that “estimating” meant “approximating or roughly calculating” and that such construction was not inconsistent with Bayesian statistics. (D.I. 347, at 32-33). The Court never stated that its construction could not be satisfied by a calculation, not could it as Bayesian statistical estimates are typically the result of calculations.

Nor did the Court impose any limitation on the precision of the estimate. “Further, the *extrinsic evidence* supplied by PUM *supports* PUM’s *contention* that ‘estimating’ was generally understood by one of ordinary skill in the art at the relevant time as a measurement that is not entirely precise.” (D.I. 347 at 33 (emphasis added)). Nothing in this statement imposed any

degree of precision. But, even if preciseness were a limitation (which it is not), Google misapprehends what “precision” means. Google suggests that a rounded number is an “estimate,” but that a specific number equates to “precision” and thus is not an “estimate.” *See, e.g., Opp.* at 9 (stating U.S. population as “‘roughly 300 million’ is estimation, whereas” census determination that population “is 303,124,754 is not”).<sup>5</sup> Under Google’s logic, a mechanic’s estimate—based on his prior experiences on similar vehicles—that auto repairs will be about \$500 would be an “estimation.” But if the mechanic were to add estimated sales tax of 8.25%, making for a total estimate of the non-round number of \$541.25, it would be a precise calculation. That is a meaningless cosmetic distinction: either way, the amount is still nothing more than a prediction.

The example that Google gives to explain this new limitation demonstrates the absurdity of its argument. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] Regardless of the degree of precision, the claimed “estimates” are estimates because they use observed results to attempt to predict values that by their very nature are not possible to calculate with 100% accuracy (*e.g.*, degree of user interest in an unseen document). Google’s attempt to convert the Court’s one sentence observation on extrinsic evidence into a limitation

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<sup>5</sup> The census number is also an estimate (albeit more precise) because (i) people are born, pass away, immigrate and emigrate *during* the process, and (ii) some people are missed during the counting.

that the Court did not require and that misunderstands “estimates” as used in Bayesian statistics should be rejected.

**B. Google Again Raises Irrelevant Issues to Avoid the Real Issue.**

Google next tries to turn the table again and suggests that Dr. Pazzani did not apply the Court’s construction for “estimating.” Opp. at 2, 10. First, that is irrelevant to whether *Dr. Fox* followed the Court’s construction. And second, Google is wrong. Dr. Pazzani set forth the Court’s construction for “estimating,” and stated that this opinions “are based on . . . the Court’s claim construction.” (Sistos Decl. Ex. 1 ¶¶ 140, 143.)

Google also cites to a reexamination response and alleges that PUM’s Motion is inconsistent with that response. Contrary to Google’s argument, the reexamination response did not specifically address whether a computation could satisfy the “estimating” requirement. Rather, PUM argued that the limitation was not satisfied because the calculation did not include any estimates. PUM’s infringement theory is entirely consistent with that response. In addition, the reexaminations are not relevant to the litigation and the response Google cites was filed before the Court construed the claims.

**IV. THE COURT SHOULD EXCLUDE DR. FOX FROM TESTIFYING THAT PROBABILITY MUST BE BETWEEN 0 AND 1.**

Google’s Opposition states that “Dr. Fox Will Not Testify That a Probability Must Be Between 0 and 1.” Opp. at 11. In light of this representation, Google should not have any objection to the Court entering an order that prohibits Dr. Fox from testifying about such opinions set forth in his expert report. Since that is the relief that PUM had requested from the Court, PUM does not address Google’s Opposition directed to “probability” in detail. However, PUM disagrees with Google’s arguments that (1) PUM’s application of the Court’s construction is inconsistent with PUM’s validity theories, and (2) Dr. Pazzani pointed to “simply numbers and

not numerical degrees of belief or likelihood.” Opp. at 2-3, 11-13. Google’s briefing on these issues contains many misstatements of fact. But since those misstatements are not germane to this issue, PUM will not further address them.

**V. THERE IS NO BASIS TO EXCLUDE ANY OF DR. CARBONELL’S OPINIONS.**

In a footnote at the end of its Opposition, Google asks that “the Court similarly bar PUM’s expert Dr. Carbonell from raising the same arguments in asserting that the patents are valid.” Opp. at 14 n.5. Google did not file a motion to exclude any of Dr. Carbonell’s report, however. Local Rule 7.1.2 requires that “all requests for relief shall be presented to the Court by motion.” Further, as explained above, Google did not identify any statements from Dr. Carbonell’s report that are inconsistent with the Court’s constructions. Thus, there is no basis to exclude any of his opinions.

**VI. CONCLUSION**

The Court already rejected the requirement that “specific” meant “unique,” “exclusive,” or “his own.” Paragraphs 67, 313, 317-19, 324, 326-27, 330, 336, 384-85, 406, 437, 465, 489, 522, 548, 562, 579, 657, 706, 783, and 791 of the Fox Report rely on the rejected construction and therefore Dr. Fox should be precluded from offering such opinions at trial. Additionally, the Court’s claim construction did not say that estimating could not be satisfied by a calculation. Nor did the Court impose any restrictions on the precision of the estimate. Therefore, Dr. Fox should be precluded from offering opinions based on paragraphs 288, 290-92, 383, 405, 435, 464, 498, 521, 547, 561, 578, 656, 661, 668, 673, 677, 706, 724, 741, and 785 of his report, which rely on these imported limitations.

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*/s/ Regina Murphy*

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