

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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APPLE INC.,  
Petitioner,

v.

Zentian Limited  
Patent Owner.

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Case IPR2023-00037  
Patent No. 10,971,140

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**PATENT OWNER'S RESPONSE**

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**EXHIBIT LIST**

<b>Exhibit No.</b>	<b>Description</b>
<b>2017</b>	Deposition of Christopher Schmandt dated September 6, 2023
<b>2018</b>	<i>Intentionally left blank</i>
<b>2019</b>	Hennessy & Patterson, <i>Computer Architecture, A Quantitative Approach</i> , Third Edition (2003) (“Hennessy & Patterson”)
<b>2020</b>	Declaration of Christopher Anderson, Ph.D
<b>2021</b>	Binu K. Mathew et al., A Gaussian Probability Accelerator for SPHINX 3, (“Mathew I”)

## I. Introduction

The Petition proposes that an ordinary speech recognition artisan would have been motivated to implement Jiang's speech recognition teachings in Chen's clustered processor and memory architecture with a reasonable expectation of success.

But neither Jiang nor Chen enables such a combination, so the Petition must prove enablement through evidence outside those references. The Petition and Mr. Schmandt, however, fail to make that showing. Indeed, Mr. Schmandt admitted under cross-examination that he has *never* built or designed the processor to memory architecture for any of the speech recognition systems he identifies in the background of his declaration. Mr. Schmandt further admitted he has never supervised anyone in the process of mapping speech recognition software to a hardware architecture like Chen's.

As Dr. Anderson explains in detail, the Petition's combination would have raised a number of complications and conflicts that the POSA would not have been qualified to address or resolve. Indeed, Jiang and Chen are inherently ill-suited for combination, since Jiang's technique requires extensive communication between computational components whereas Chen does not allow communication between some of its processors and memories.

Moreover, real-world evidence from contemporaneous references teaches that the combination would *not* be expected to speed up Jiang's recognition process, and that the POSA would not have been motivated by such an expectation. To the contrary, *Mathew I* teaches that a five-processor parallel processing system *slowed down* the speech recognition process compared to a two-processor system due to the associated synchronization overhead. Mr. Schmandt's other purported motivations—alleged cost benefits and “flexibility and scalability”—are likewise baseless, as Mr. Schmandt's deposition revealed. By contrast, Dr. Anderson explains in detail why the POSA would not have been motivated to combine Jiang with Chen in view of the known challenges and disadvantages of such a combination balanced against the low likelihood of benefits.

Finally, the Petition further fails because it provides no theory as to how the *combination* of Jiang and Chen would operate to meet limitations 1(d) and 1(e). As Mr. Schmandt admitted, his theory requires that Jiang *modified* to use Chen's hardware would practice both limitations, but his declaration does not even *mention* Chen with respect to limitations 1(d) and 1(e), much less explain *how* the combination of Jiang and Chen would meet them. And although Mr. Schmandt attempted to fill the void with a new, *ad hoc* theory presented for the first time at his deposition, the evidence demonstrates that theory would not have been enabled.

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