Fully Integrated Silicon Photonic Tensor Core for Next-Generation Applications

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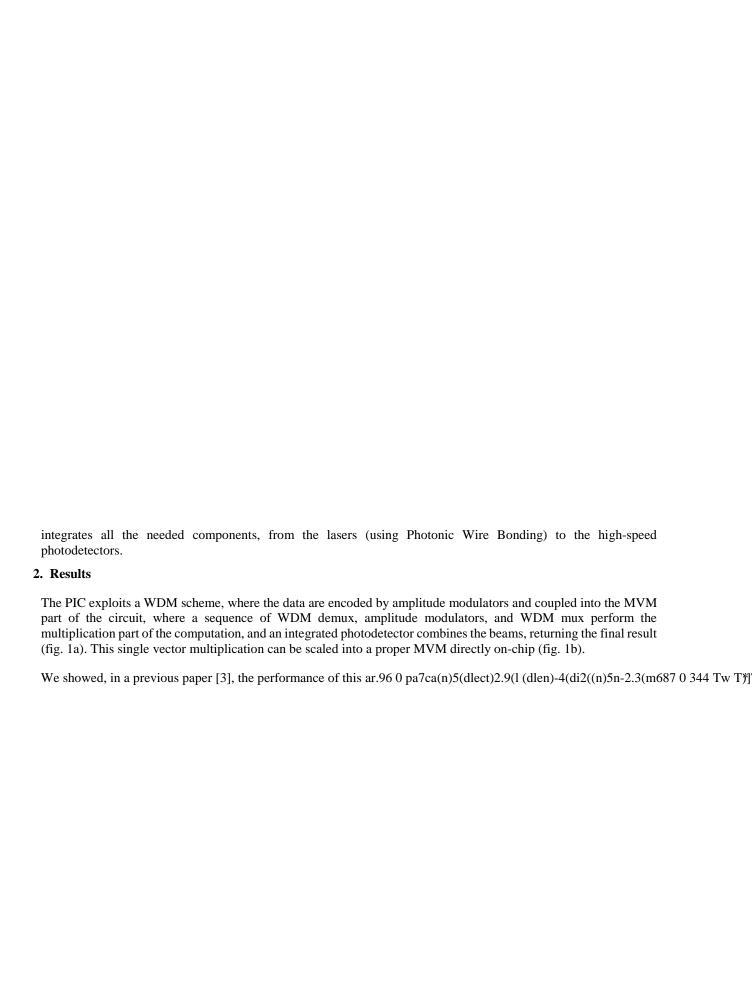
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Abstract: Here we present our architecture for Silicon Photonic Tensor Core, capable of responding to the needs of Neural Networks, Augmented and Virtual Reality applications. We present a novel version fully integrated, from lasers to photodetectors. © 2023 The Author(s

1. Introduction

With the explosion of data-based applications, where fast elaboration of the incoming data streams from different sources is required, the request for highly specialized hardware accelerators has increas



de	e tested our system rection over the GV	m with different ap W face f	plications to pro	ve its performance	e [4]. In the first to	est, we run an edge

- [4] Ma, Xiaoxuan, Nicola Peserico, Ahmed Khaled, Zhimo Guo, Behrouz Nouri, Hamed Dalir, Bhavin Shastri, and Volker Sorger. "High-density integrated photonic tensor processing unit with a matrix multiply compiler." (2022).
- [5] Peserico, Nicola, Thomas Ferreira de Lima, Paul Prucnal, and Volker J. Sorger. "Emerging devices and packaging strategies for electronic-photonic AI accelerators: opinion." Optical Materials Express 12, no. 4 (2022): 1347-1351.