# Baya Systems secures $36 million funding to innovate in chiplet technology



Baya Systems, a prominent figure in system IP technology, has recently announced the successful completion of a Series B funding round, which raised over $36 million. The investment round was led by Maverick Silicon, with additional strategic backing from Synopsys, alongside reinvestments from Matrix Partners and Intel Capital. This financial boost aims to facilitate Baya’s operational growth and accelerate the development of its software-driven intellectual property (IP) portfolio specifically catered to system-on-chip (SoC) designs, thereby adapting to the burgeoning chiplet-based economy.

As the demand for artificial intelligence skills, effective data transfer, and increased compute density surges, the conventional SoC designs have increasingly struggled to meet these needs economically. This shift has prompted the industry to explore “system-of-chips” models that are made viable through the application of chiplet technology. Baya's modular solutions are positioned to deliver expandable performance with optimal power efficiency at lower costs, aligning perfectly with these changing requirements.

In a conversation with Embedded.com, Nandan Nayampally, Chief Commercial Officer at Baya Systems, elucidated the company’s strategic intention to address the significant gaps in the chiplet ecosystem. Nayampally, who previously held a leadership position at Arm, is now set to spearhead Baya's initiatives in providing solutions to contemporary business challenges, particularly in the rapidly evolving AI sector. He articulated that Baya is committed to developing high-performance solutions that cater to the escalating demands in artificial intelligence, automotive applications, and data centre operations.

Nayampally mentioned that Baya’s product offerings will feature substantial core count coherent processing systems, high-bandwidth PB-scale AI accelerators equipped with advanced functionalities such as multi-casting, and heterogeneous processing architectures that streamline wire count and logic without sacrificing performance. He also highlighted Baya’s advantage within the expanding RISC-V ecosystem and its dedication to creating data-driven, tailored system fabrics that resonate with customer needs. He remarked that their innovative platform facilitates multi-chiplet designs, ensuring the capability to meet high-demand processing requirements, setting them apart from more established competitors.

Under the guidance of industry veterans, notably microprocessor visionary Jim Keller, who serves as Chairman, Baya Systems is ambitiously addressing one of the semiconductor industry's key challenges: enabling efficient system design in the chiplet era. Keller's confidence in the founding team—including Dr. Sailesh Kumar, Eric Norige, and Joji Philip—has been instrumental in securing financing and assembling a top-tier workforce dedicated to delivering performance solutions tailored for this evolving market.

With extensive experience from NetSpeed and Intel, the Baya leadership team recognised early the paramount importance of communication bandwidth between compute, memory, and I/O systems. They identified that existing architectures were inadequate in resolving these issues, especially with modern computational demands that require massively parallel processing and high-bandwidth data flow.

Baya's commitment to semiconductor innovation is evident in its approach to tackling the pressing demands for high-performance design within artificial intelligence, automotive, and data centre sectors. The company's WeaverPro software offers an all-encompassing solution from specification through to post-silicon tuning, ensuring that designs meet essential performance criteria (KPIs). The WeaveIP portfolio aims to optimize throughput, reduce latency, minimize silicon footprint, and enhance data transport efficiency.

WeaverPro is described as a “data-driven platform” that enables designers to refine cache and memory systems and allows for algorithmically optimized fabric designs. Meanwhile, WeaveIP is meticulously engineered for chiplet-readiness, incorporating a network design that mitigates namespace and congestion, providing “multi-level coherency” for multi-chiplet systems. Nayampally indicated that a notable achievement has been the optimization of designs, which can improve performance by 20% and decrease area and power consumption by over 25%.

The increasing demand for generative AI and multimodal computing further underscores the necessity for modular solutions. Nayampally articulated that AI entails diverse compute elements, including traditional CPUs, GPUs, and specialized NPUs or accelerators, necessitating highly optimized orchestration through proficient, high-bandwidth fabrics. Baya Systems aims to solidify its platform as integral for efficient tiling, enabling quick and localized customization through its design tools.

The company is also responding to the emerging interconnect standards such as the Ultra Accelerator Link (UALink), which is pivotal for meeting the rapid scale of generative AI's requirements. Such developments position Baya as a crucial enabler of next-generation architectural designs that facilitate seamless data flow, ideal for advanced computing systems.

Baya has quickly brought its flagship products to market, drawing on leadership from industry pioneers including Apple, Intel, and AMD, alongside its Chairman Jim Keller. Among its early successes is a partnership with Tenstorrent, which has embraced Baya’s technology for its AI and RISC-V chiplet solutions. Nayampally confirmed that Tenstorrent has opted to license the WeaveIP fabric to expand its chiplet solutions, capitalizing on Baya’s IP and software to analyse, customize, and deploy a robust intelligent compute platform suitable for current and future workloads.

Overall, Baya Systems is navigating the complexities of the semiconductor market with targeted innovations designed to address the evolving needs driven by artificial intelligence and data-centric applications, thereby shaping the future landscape of computing architectures.

Source: [Noah Wire Services](https://www.noahwire.com)

## References

* <https://www.techmeme.com/250123/p26> - This article corroborates the recent funding rounds in the tech industry, including Baya Systems' Series B funding, highlighting the trend of significant investments in innovative technologies.
* <https://www.embedded.com/> - Embedded.com is a platform where industry leaders like Nandan Nayampally often share insights on technological advancements and strategic intentions in the semiconductor sector.
* <https://www.arm.com/> - Arm is a leading company in the semiconductor industry, and Nandan Nayampally's previous leadership role there underscores his expertise in system-on-chip (SoC) designs and chiplet technology.
* <https://www.riscv.org/> - The RISC-V ecosystem is a crucial area where Baya Systems is focusing its efforts, providing solutions that align with the expanding needs of this open-source instruction set architecture.
* <https://www.intel.com/content/www/us/en/homepage.html> - Intel is a major player in the semiconductor industry, and Baya Systems' collaboration with Intel Capital highlights the strategic importance of their partnership in advancing chiplet technology.
* <https://www.synopsys.com/> - Synopsys is a leading provider of electronic design automation (EDA) software, and their strategic backing of Baya Systems underscores the significance of Baya's IP solutions in the semiconductor sector.
* <https://www.matrixpartners.com/> - Matrix Partners is a venture capital firm that has reinvested in Baya Systems, indicating confidence in Baya's growth potential and innovative solutions.
* <https://www.tenstorrent.com/> - Tenstorrent's partnership with Baya Systems demonstrates the practical application of Baya's technology in AI and RISC-V chiplet solutions, showcasing its market viability.
* <https://www.apple.com/> - Apple is a leader in the tech industry, and Baya Systems' association with industry pioneers like Apple highlights the potential impact of Baya's innovations on future computing architectures.