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**Journal Entry: Neuromorphic Computing**

One fascinating trend in computer science is neuromorphic computing, which involves designing hardware that mimics the functionality of the human brain. This innovation stands out because it uses spiking neural networks and asynchronous, event driven architectures, leading to unprecedented energy efficiency and potential for new advances in real time pattern recognition and sensory data applications. As neuromorphic systems become widespread, they will require a shift in algorithm design and encourage the development of new programming languages tailored for brain like computation. This technological direction excites me personally, as I work often with Python and data rich applications where low power consumption and fast pattern recognition are valuable. Gaining experience with neuromorphic simulators aligns perfectly with my academic and career aspirations and prepares me for future opportunities in cutting edge computer hardware research (Boahen, 2023).

**Journal Entry: Structural Battery Composites**

Another underreported development is the use of structural battery composites in computing devices. These are energy storing materials that also serve as load bearing components, enabling the creation of thinner, lighter computers and wearables. Integrating batteries into device frames, rather than relying on separate cells, will fuel a revolution in device design and embedded systems, with profound implications for mobile computing and the Internet of Things. Consumers will benefit from longer battery life and sleeker products, while engineers will have to rethink power management algorithms to suit these new materials. As I continue to build expertise in software design and embedded electronics, understanding how structural battery composites alter the software-hardware interaction deeply interests me, especially for designing resilient and adaptive code in data-driven environments (Arent, Maynard, & Parekh, 2025).

**References**

Arent, D., Maynard, A., & Parekh, D. (2025). Structural battery composites. In *Top 10 Emerging Technologies of 2025*. World Economic Forum. <https://www.weforum.org/publications/top-10-emerging-technologies-of-2025/in-full/structural-battery-composites/>

Boahen, K. (2023). A neuromorph’s prospectus. *Communications of the ACM*, 66(5), 44–53. <https://doi.org/10.1145/3587139>