



Perceiving a 3D world from a 3D silicon architecture

Taking inspiration from the evolution-honed efficiency of eye-brain systems, NimbleAI pioneers a customizable 3D-integrated sensing-processing architecture that combines efficiency of neuromorphic 3D vision with productivity of AI frameworks.



Sense light and depth

ONLY changing light is sensed, inspired by the retina. Depth perception is inspired by the insect compound eye.



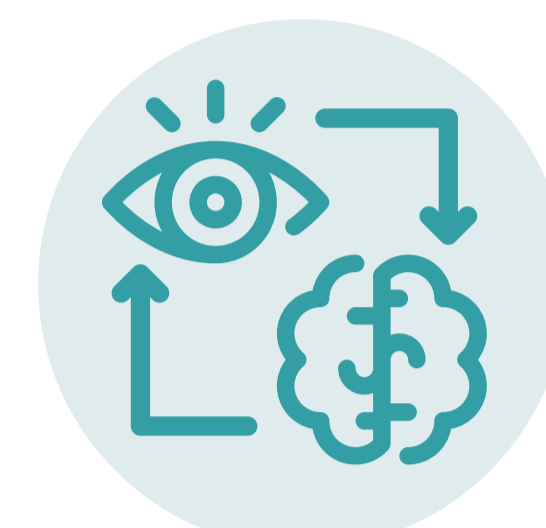
Ignore? or recognise

Our chip ONLY processes feature-rich and/or critical sensor regions.



Process efficiently

ONLY significant neuron state changes are propagated and processed by other neurons.



Adaptive visual pathways

Sensing and processing are adjusted at runtime to operate jointly at the optimal temporal and data resolution.

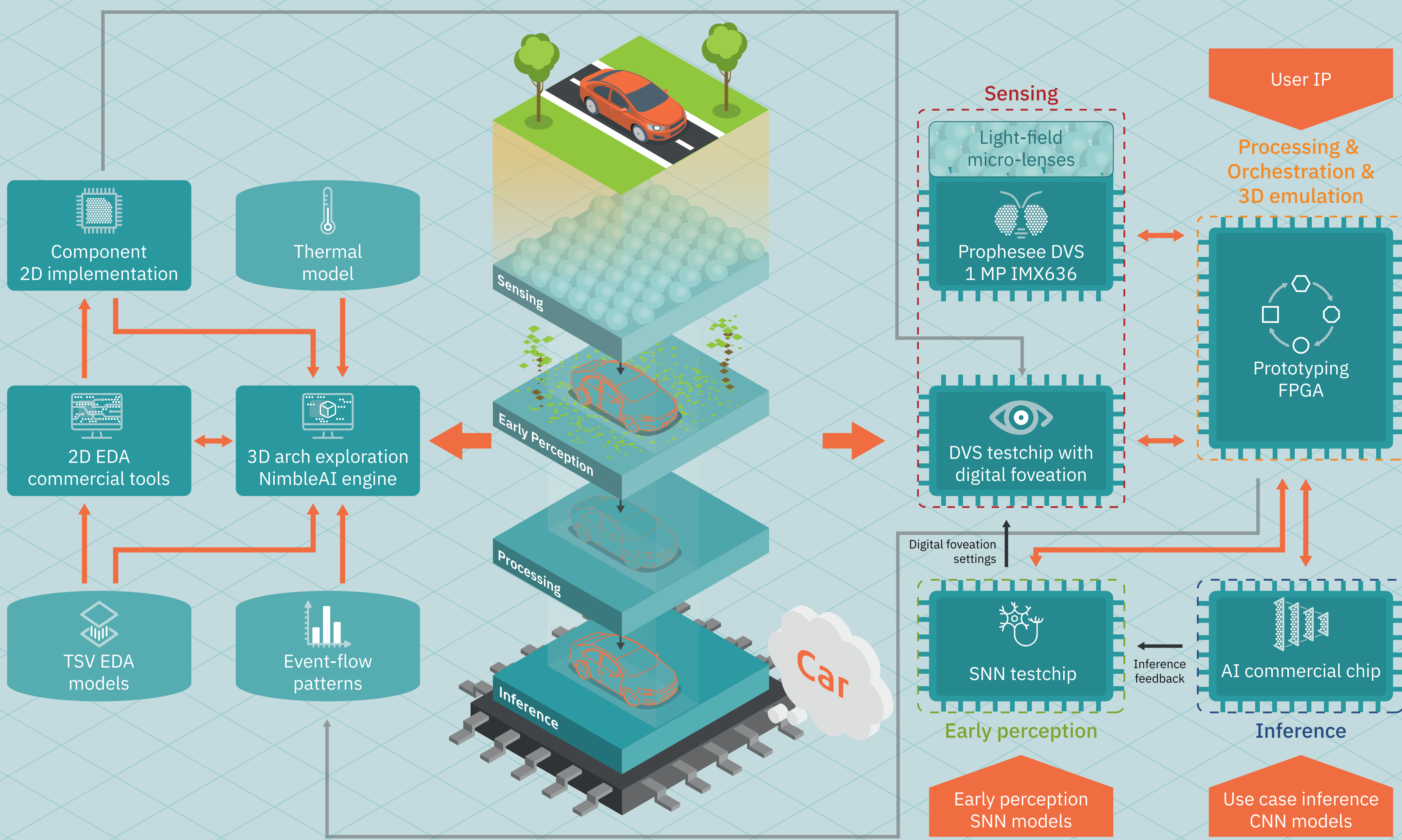


3D integrated silicon

Sensing, memory, and processing components are physically fused in a 3D silicon volume to boost the communication bandwidth.

EDA toolchain

Functional Prototype



100x

Energy-efficiency improvement



50x

Latency reduction



~10s mW

Energy budget

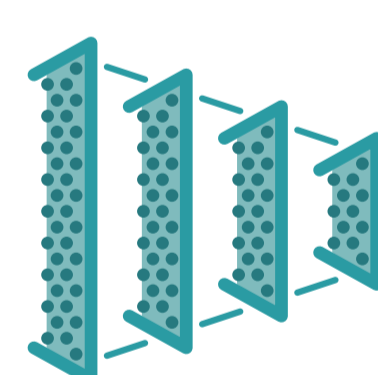


~50 mm²

Silicon area

First light-field dynamic vision sensor

World's first light-field enabled dynamic vision sensor for monocular-image-based depth perception

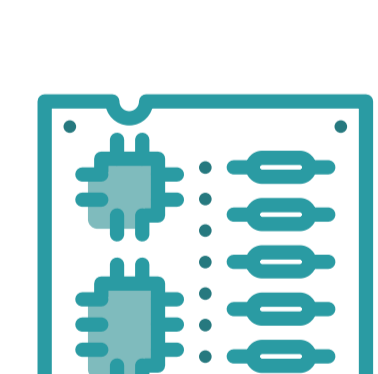
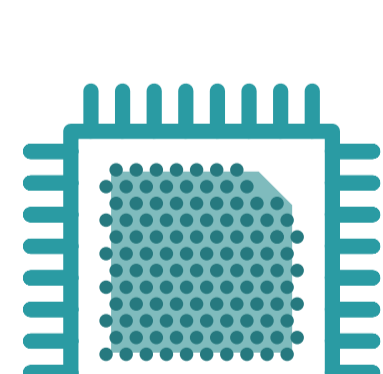


First event-driven full perception stack

World's first event-driven end-to-end perception stack that runs industry standard convolutional neural networks

Silicon-proven implementations

Silicon-proven implementations for use in next-generation commercial neuromorphic chips



Functional prototype

A prototypic platform of the NimbleAI architecture along with programming tools and OS support to test new AI and computer vision algorithms

EDA toolchain

EDA tools to advance 3D silicon integration and exceed the pace of Moore's Law



New end products

New end products that showcase the competitive advantage of NimbleAI technology

Harness the biological advantage in your vision pipelines!

Learn how to test the NimbleAI technology in your application with our prototype.



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