XEdge AI

A disruptive hardware solution that thinks faster, learns locally, and stores data exponentially — all on a single chip.

Pitch Deck
2025

Our Team

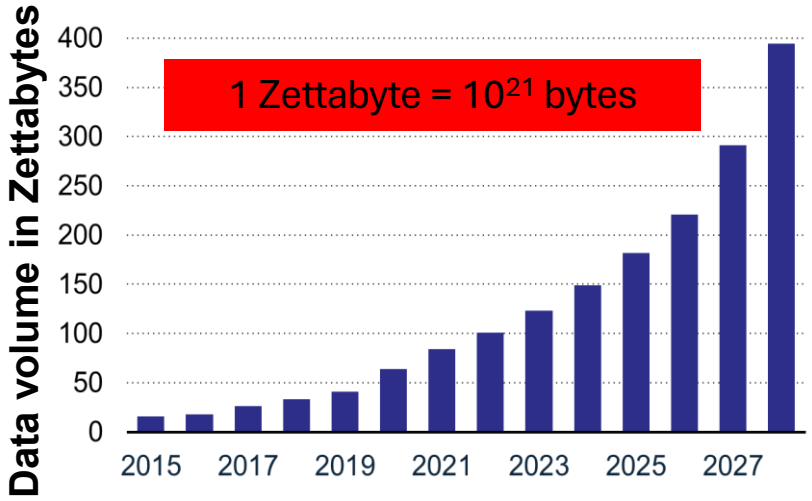
Dr. Mia, PhD
Co-founder and CEO
Ph.D. in Electrical Engineering (TTU), MBA (UC Berkeley, ongoing). Serving as a Hardware Development Engineer at Lumentum, specializing in silicon photonics and photonic interconnect solutions.

Dr. Khan, PhD
Co-founder and CSO
Ph.D. in Electrical Engineering (Stanford), Postdoctoral researcher (UC Berkeley). Will join as an Assistant Professor of Electrical Engineering and Computer Sciences at UC Berkeley in Fall 2025.

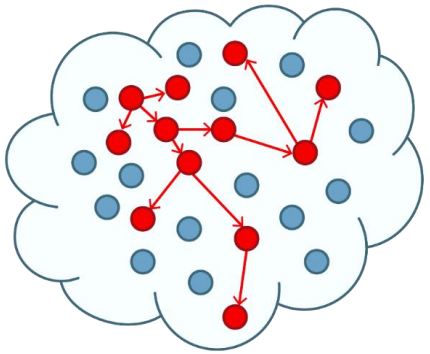
Dr. Hasan, PhD
Co-founder and President
Ph.D. in Electrical Engineering (UT Dallas) and WLAN System Staff Engineer at Qualcomm, specializing in cutting-edge wireless and radar technologies with a passion for turning complex systems and signal processing into real-world innovation.

Professor Sayeef Salahuddin, PhD
Adviser
Ph.D. in Electrical Engineering from Purdue University; TSMC Distinguished Professor of Electrical Engineering and Computer Sciences at UC Berkeley.

Era of Abundant Data

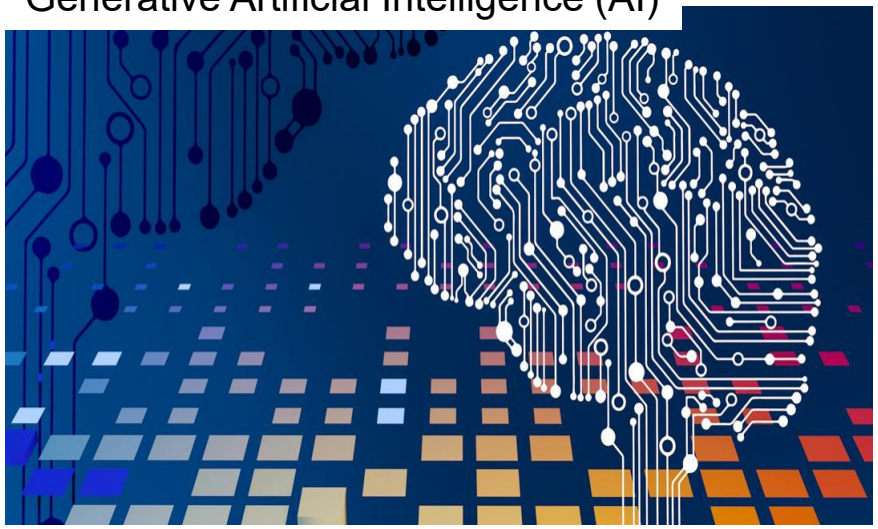


Big Data

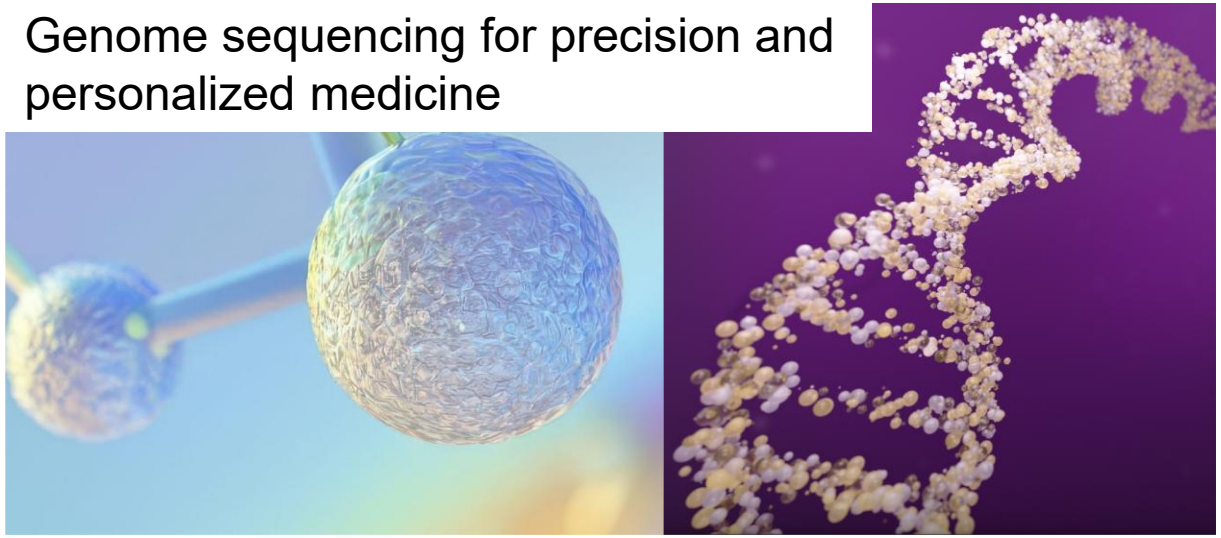


High Performance Computing

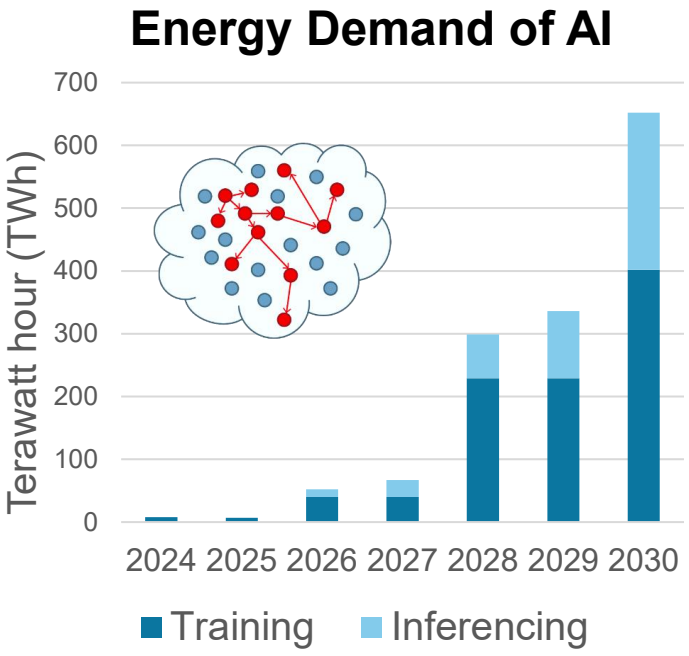
Generative Artificial Intelligence (AI)



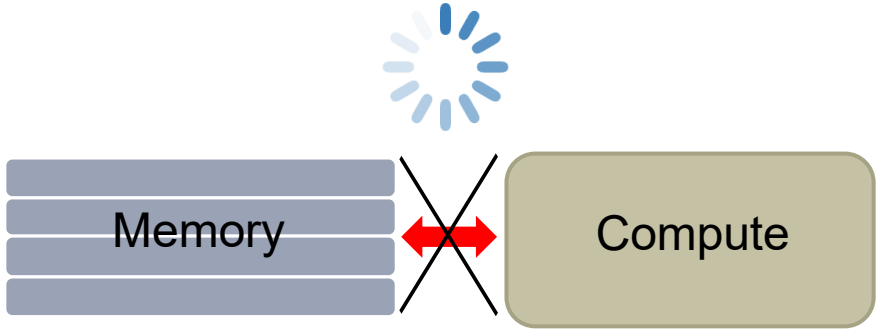
Genome sequencing for precision and personalized medicine



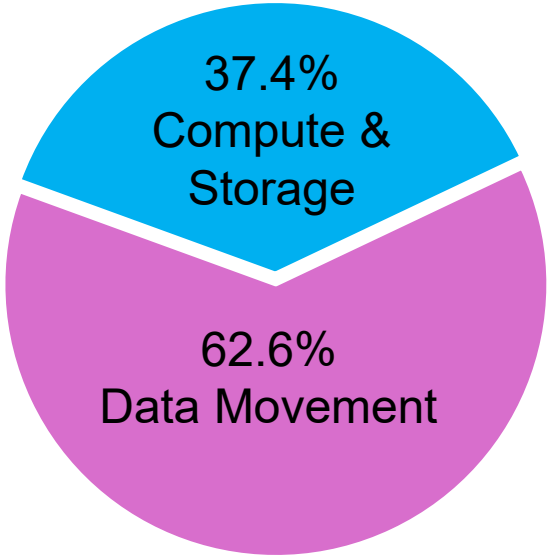
Energy demand of AI and Challenges

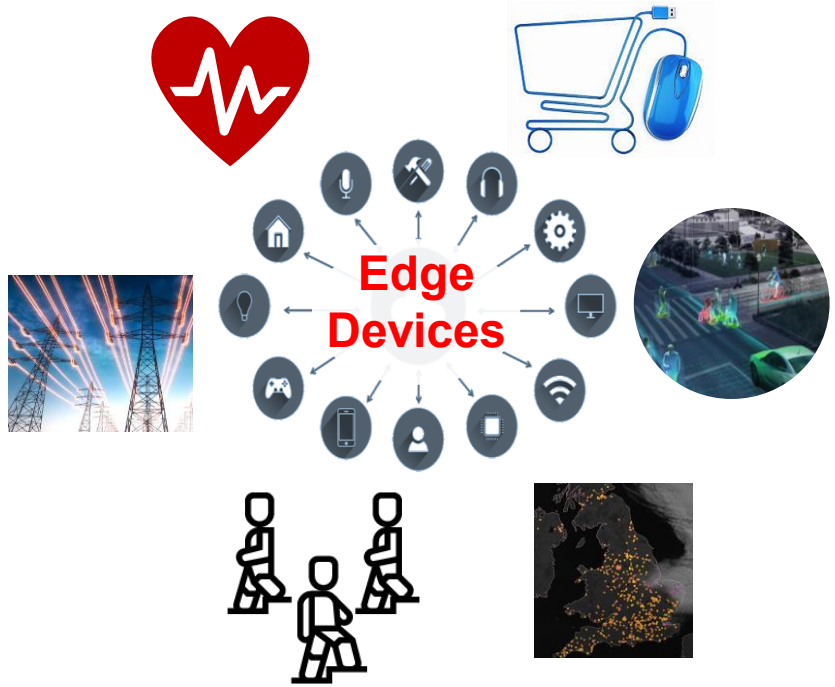


29.3 TWh → entire Ireland
1440 TWh → 130M US household



Separate Memory and Compute Units



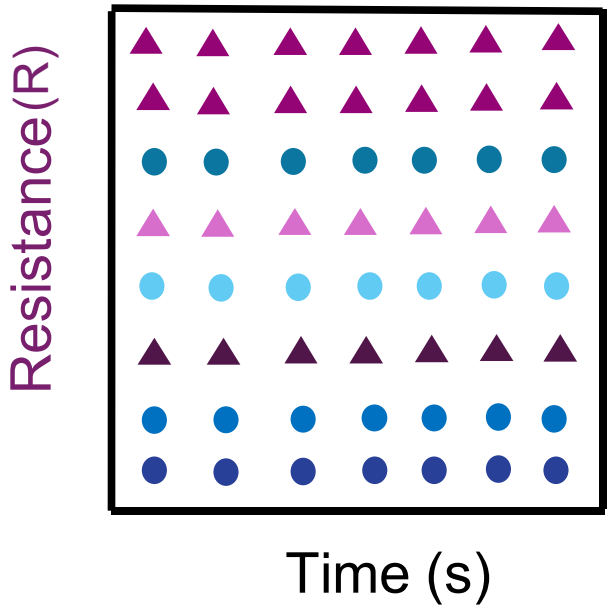


Ultra-dense on-chip non-volatile memory driving efficient, accelerated Edge AI computation.

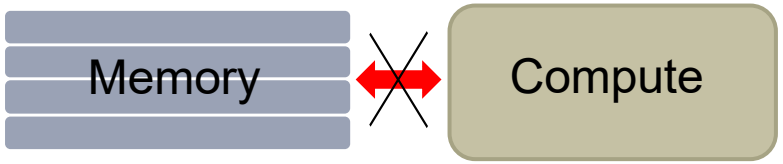
Looming Future: large AI systems are likely to consume as much energy as an entire country

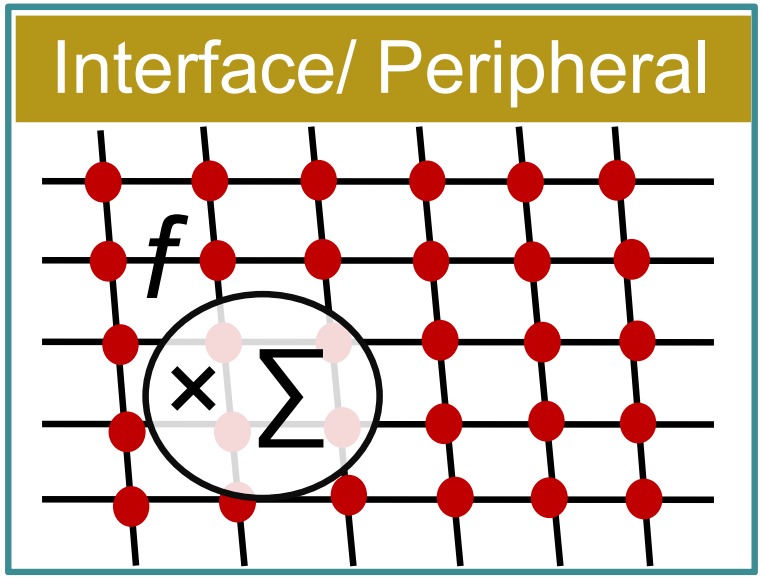
Our Tech

Hybrid integration of physics and dimensionality



Stable Multi-bit memory





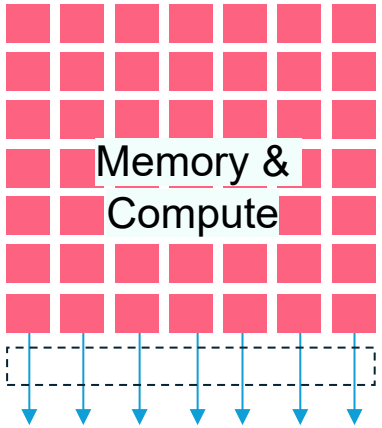
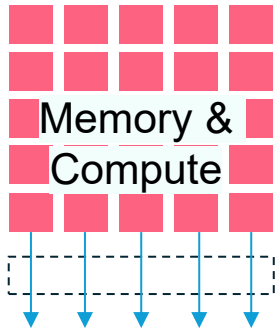
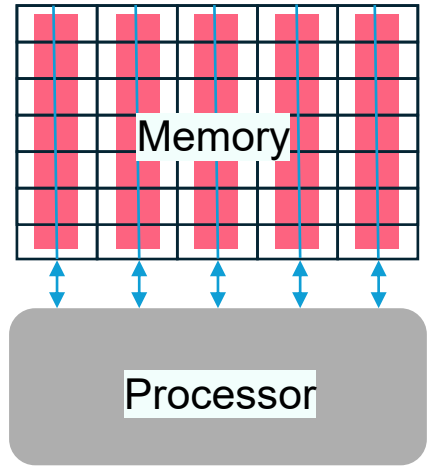
Computational memory

Current: 2 states = 1 bit
Our technology: **R x k** states,
R states per cell, k vertical stages,
R ≥ 8; k ≥ 4
≥ **256x** higher density of memory states
≥ **8x** higher bit density
$(2^8 = 256)$

OUR USP

A Berkeley Spin-off

- ✓ *Leveraging cutting-edge research from Stanford and UC Berkeley*
- ✓ *Utilizing Stanford and Berkeley fabrication facilities on a user-fee basis*

	Multi-bit AI analog IMC 	Current based analog IMC (Transistors, NVM, Capacitors) 	Traditional digital accelerators (GPU, TPU, FPA) 
✓ Energy efficiency	50x-100x	10x	1 (Baseline)
✓ Compute	Deterministic Multi-bit analog in memory	Single-bit analog in memory	Separate memory and compute
✓ On-chip storage & training	Yes	Limited or No	No (Mostly inference only)
✓ Memory type	Non-volatile (10y @100C)	Either volatile or short-retention	Volatile (SRAM/DRAM)
✓ Switching voltage	<1V	~1.5–3V	>3V
✓ Speed	<50 ns	~100 ns – 1 µs	10s of ns – 100 ns
✓ Bit/State density	>256x/ 8x	16–64x/ 1–4x	1x / 1x

Use Cases (everywhere…)

Finance

- **Real-time fraud detection** on devices like ATM or Point of Sale
- **On-device AI** for personalized **investment advice**, budgeting tips, or credit score insights
- **Keeping sensitive financial data on-device** to meet regulatory requirements

Surveillance

- **Real-time video analytics** can be performed using Edge AI
- **Detect** unusual behavior, **prevent** theft, loitering, vandalism, etc.
- **On chip Facial recognition** for access control, public safety

Smart Home

- **Processing wake words and commands locally** using Edge AI
- AI at the camera can distinguish people, pets, shadows **enabling /disabling emergency alarm**
- Edge AI can learn habits, occupancy, and local weather to **optimize energy usage**

Use Cases (everywhere…)

Health Care

Real-time patient monitoring for better care

Local data processing enhances **security and privacy** of health data

Instantly identifies health issues before they arise

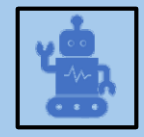
IoT Devices

Edge AI enhances the **efficiency and latency** of IoT devices

Privacy is improved through local data handling

Advanced analytics can be performed on-site for **quick decision-making**

Autonomous Industry



Real-time processing supports autonomous machinery

Predictive maintenance **minimizes downtime and costs**

Facilitates **smart logistics and inventory management**

Edge AI Market

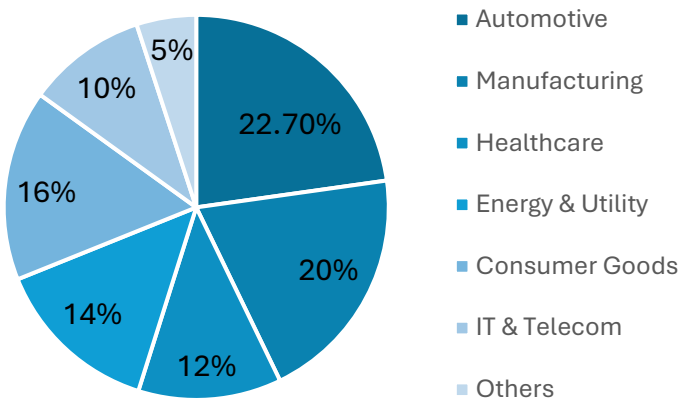
Opportunities

- ✓ Clean Tech Impact
- ✓ Real-time Decision Making
- ✓ Improved Privacy and Security

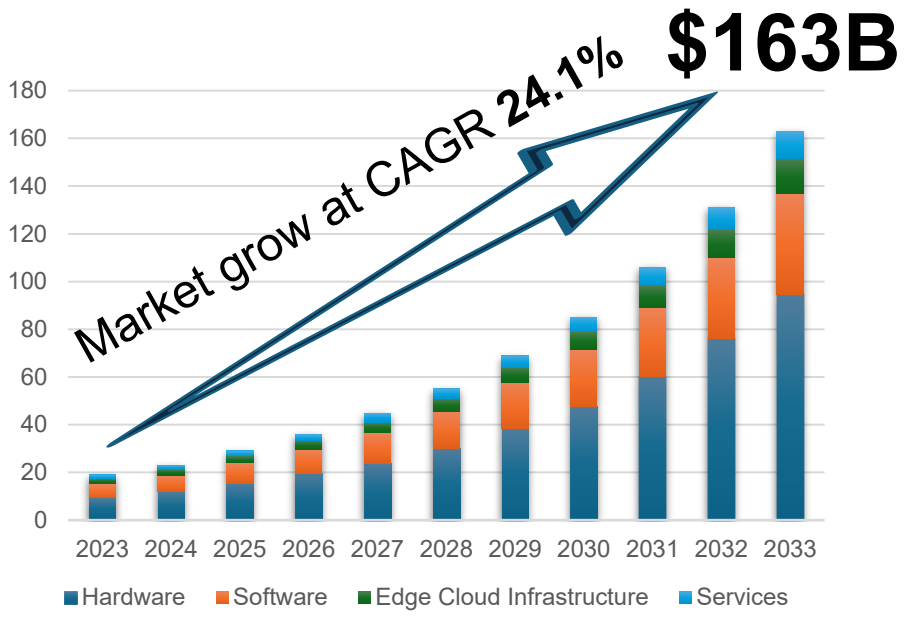
Key Industry Players

- ✓ Nvidia, Qualcomm, Arm, Amazon

Market share by industry



Global market size **20.8B** (2024)



Growth drivers

- Increasing demand for smart home and smart cities
- Development of edge computing devices and services

By region

- North America (40%)
  - Largest market share
- Europe (29%)
- Asia pacific (22%)
- Latin America (9%)

Milestones (18 months)

Q_1-Q_2 2025

- ✓ Company registration (✓)
- ✓ Trademark registration (✓)
- ✓ File provisional patent (✓ draft ready, filing pending)
- ✓ Investor data room (✓)

Over the next 18 months, our roadmap is tightly focused on foundational hardware validation and advancing system-level innovation to fully realize our multi-bit architecture.

Device

- Prototyping in Berkeley/Standford Cleanroom facilities
- Testing Lab setup
- Materials and devices qualification
- 165x165 (10KB) memory array demonstration (27225 cells)

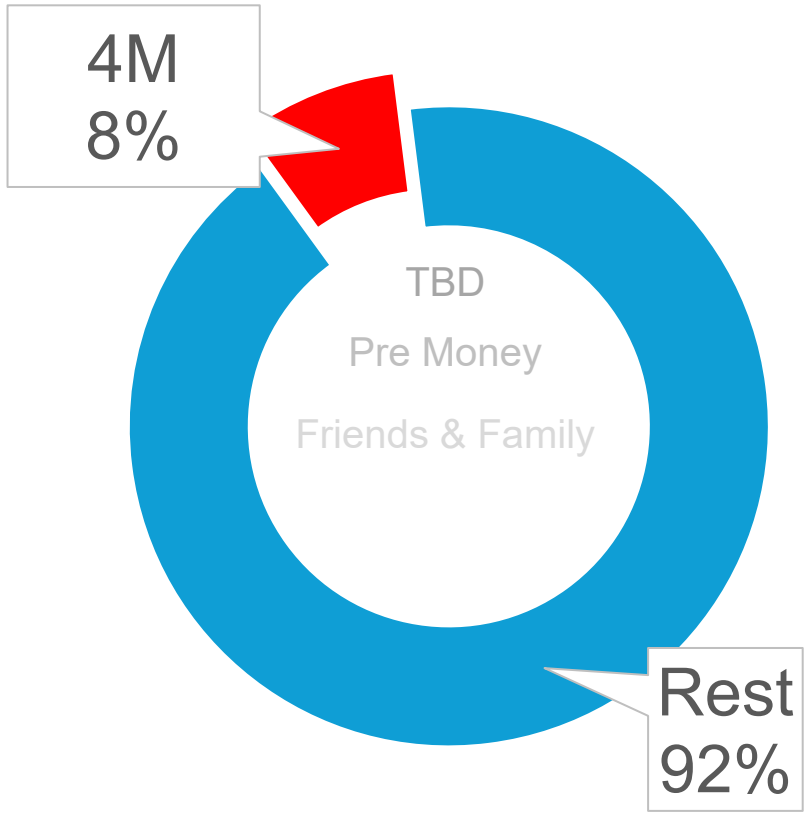
System

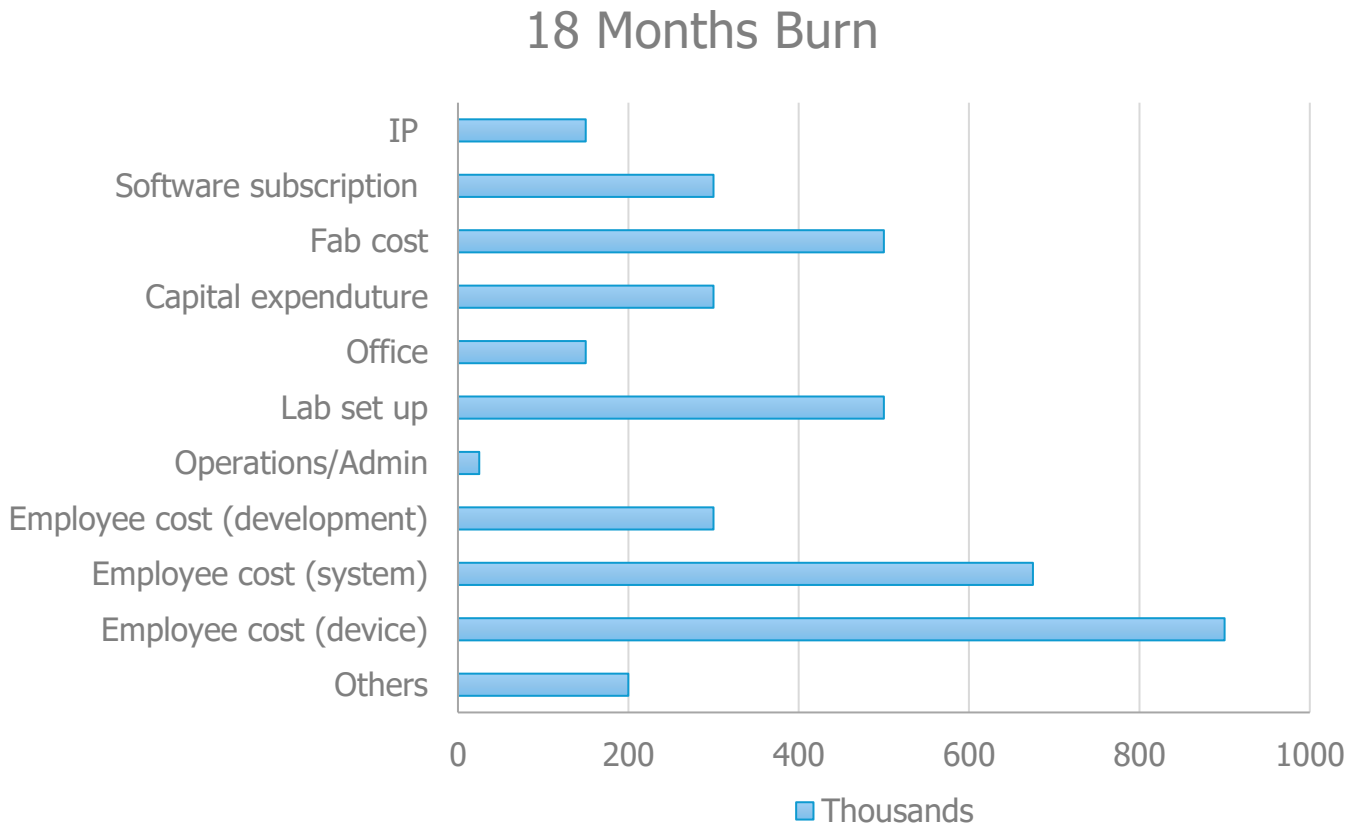
- Multi-bit crossbar architecture feasibility
- Noise level reduction (algorithm developed)
- Data routing optimization

- 5+ IP filings

Our ASK

Investment USD 4M for 8% Equity





✓ 18 months burn rate = 4M
✓ Capital allocation could vary

Thank You

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