A Sleepless Eye on Patient Monitors: Real-Time AI in Healthcare

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AI in Healthcare: Barriers to Widespread Deployment

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Good Machine Learning Leads to Better Clinical Care

- Inter-observer variability
- Intra-observer variability
- Intermittent check-ins

- Consistent (qualitative, objective)
- Accurate (fatigue, bias resistant)
- Continuous flow of information

Machine learning has barely scratched the surface in healthcare.

Example: machine learning is revolutionizing digital pathology.

Breast cancer... or not?
- Pathologists agree only 75.3% of the time!
- Radiologists miss 16% of breast cancer diagnoses
Beyond Static: Decision Support on Time Series Data

• Interpretation of **real-time** physiological data drives split-second life-altering clinical decisions.

• Reliably identifying key features requires years of experience in addition to advanced medical training.

• But the process is still:
  – Slow,
  – Error-prone, and
  – Inconsistent across individuals.

• Quality of care depends too strongly on the experience of the person monitoring the data.
Where Can Timely and Accurate Interpretation Save Lives?

• Environments where:
  – Every second matters
  – Adverse outcomes are severe
  – Interventions are costly

• Require interpretations that are:
  – Faster
  – More accurate
  – Consistent

• Delta Brain’s technology supports decision making speed, quality, and scale.
AI-Based Patient Monitoring: Near-Term Vision

• Accurate, consistent and **real-time detection** of events and trends in patient condition.

• **Continuous** 24/7 coverage for all patients, local and remote.

• Adaptive technology that gets **smarter** with each use.
Beyond Accuracy and Throughput, to *Scale*
GPU-Based ML in a Highly-Regulated Industry
Integrate within and between hospital systems

- Data: increase statistics on rare cases
- Triage: identify high-risk patients and move them to the appropriate facilities
- Evidence-Based Protocols: “Fleet learning” across hospitals, to distribute best practices.
AI in Healthcare: Hope for Widespread Deployment

• This is already a trend in other industries

• Some health systems are stepping up, such as the 100+ members of the Solutions for Patient Safety

• “Putting aside competition”

• “Learn from and all teach each other”
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Smarter Software for Better Care

Want to learn more?
Want to be a clinical partner?

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