

Case Study: TeraCrunch's AI Solution Revolutionizes Cancer Care with Life-Extending Interventions

About the Client

A major hospital system in the midwest

Challenges

Studies have found that timely intervention can extend length of life and improve quality of life for stage 4 and stage 3 cancer patients. Oncologists at a major hospital faced challenges in predicting adverse events in stage 3 and 4 cancer patients. The inability to anticipate complications resulted in delayed interventions, adversely affecting patients' quality of life and longevity.

Predicting Patient Risk Scores

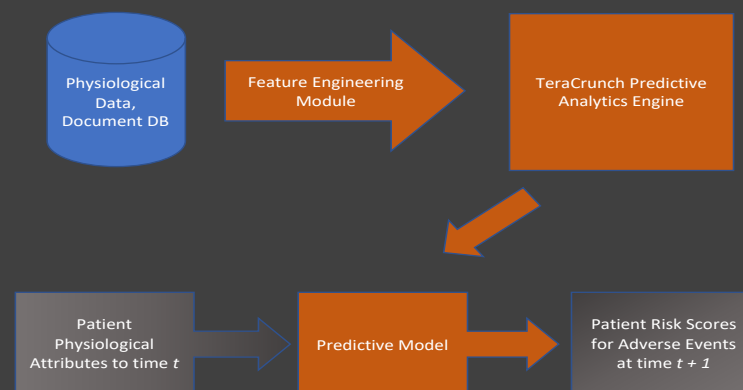
TeraCrunch developed a predictive analytics solution that leverages machine learning algorithms to analyze patient data. The system identifies patterns and predicts the risk of adverse events, enabling timely medical interventions.

TeraCrunch collects physiological data continuously for study participants. The data are captured by wearable devices, then obtained by TeraCrunch via API and stored in a document-based database.

The data then undergo a series of transformations and aggregations and are then joined with deidentified event history data from the hospital's EMR system. At that, a predictive model is learned by TeraCrunch's analytics engine and serialized to perform real-time predictions as new physiological inputs are obtained from the wearable devices.

TeraCrunch hosts the predictive model and provides predicted risk scores across a set of adverse events, including visits to the emergency department, unscheduled visits to the clinic, and death, among others. The predictions are provided in tabular format and absorbed back into the EMR system to allow for alerts in the typical workflow of the clinic.

The predictive models are retrained at regular intervals as more participants enter the study and longer time series are captured for the physiological measures. See figure below for a high-level flow.



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Outcomes

Reduced Emergency Dept. Complications	Higher Survival rates	Better quality of life	Decreased Readmission
30% reduction in emergency complications among participants due to early intervention strategies.	Improved patient survival rates by an average of 6 months.	Enhanced quality of life for 70% of the patients monitored by the system	Decreased hospital readmission rates by 20%, reducing healthcare costs.

Conclusion

TeraCrunch's solution empowered oncologists with actionable insights, allowing for preemptive care that significantly improved patient outcomes and healthcare efficiency.

About TeraCrunch

- **11 Years of AI Mastery:** Your trusted partner in the AI maze. US based.
- **Tailor-made AI Solutions:** Over 150 projects delivered with 5-40x ROI.
- **No Nonsense:** Direct results, no IT runarounds or overcharging.
- **Our Edge:**
 - Proprietary methods plus a tech-stack perfected over a decade.
 - Elite data scientists from Harvard and NASA, ready to join your team.
- **Free Viability Assessment:** Essential expert evaluation to ensure your AI project's success, identifying high-value use cases and validating your data's potential — all at no cost.
- **Why TeraCrunch?** Amidst the fast-paced AI world filled with IT firms posing as AI gurus and overpriced bespoke services, we provide quick results you need

Contact us for a free consultation at advancedanalytics@teracrunch.com