Verseon’s New Method Helps AI Systems Know Which Models to Trust

Peer-reviewed ICAD 2026 paper describes innovations for improving AI prediction accuracy for complex datasets

SAN JOSE, CA, UNITED STATES, June 17, 2026 /EINPresswire.com/ -- When AI systems combine several models to make a prediction, they face a deceptively simple problem: for any particular inference task, which model should they trust most? Verseon International Corporation today announced peer-reviewed research presented June 12 at the 2026 IEEE International Conference on AI and Data Analytics (ICAD 2026) describing a new method designed to answer that question for complex prediction problems.

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>
> *Ed Ratner, Verseon*

At the conference, the company presented its paper Validation-Conditioned Dynamic Ensemble Regression with Applications in Biomedical Data. Verseon has incorporated the technique presented into its patent-pending VersAI™ technology, building on the company's prior work in ensemble learning, the practice of combining multiple AI models to improve predictions.

Combining models that specialize on specific types of problems and data features instead of relying on one large monolithic model hold promise for improving AI prediction accuracy. But model-combining poses a difficult question: when several models disagree, which model should the system trust most?

Verseon's new dynamic ensemble regression method allows the system to dynamically change how much it relies on an any given model for a specific prediction. For any particular inference task, Verseon's method looks at similar examples from a separate validation dataset to give greater weight to the models that performed best on such examples.

In practical terms, Verseon's approach works much like consulting a group of experts, then listening more closely to the experts who have been most accurate solving similar problems in the past. The result is an AI system designed to adapt to the specific prediction being made, while still benefiting from the combined strength of the full group of models that represent a collection of specialized experts.

Over the past three decades, ensemble learning has become an important avenue for improving prediction across complex datasets, including datasets that are imbalanced, noisy, scattered, or high-dimensional, meaning they contain many features compared with the number of examples. Prior to Verseon's innovative solutions, combining individual models into one coherent predictive framework remained a significant challenge.

Verseon tested its dynamic ensembling approach against current state-of-the-art methods using seven standard regression benchmark datasets from the UCI repository and three biomedical datasets derived from NHANES NIH data. On average, Verseon's adaptive approach reduced mean-squared prediction error by 17% for the UCI datasets and by 8% on the biomedical data sets.

"At Verseon, we're opening up new possibilities for handling complex datasets," said Ed Ratner, Verseon's Head of Machine Learning. "Our approach offers a practical, improved way to combine models efficiently and accurately."

In life-sciences applications such as drug discovery, diagnostics, and biomedical research, inaccurate predictions can send scientists down the wrong experimental path or cause important signals to be missed in complex data. By improving how AI systems combine multiple models, Verseon's method can help researchers identify promising therapeutic candidates, support more accurate diagnostic models, and prioritize experiments more effectively.

The value of Verseon's method is not limited to life sciences. The approach is applicable to a broad range of complex prediction problems in which success depends on knowing which models to trust, when to trust them, and how much weight each model deserves.

About Verseon

Verseon International Corporation (www.verseon.com) is a clinical-stage, technology-driven pharmaceutical company transforming the delay, prevention, and treatment of disease. Using its Deep Quantum Modeling + AI platform, Verseon is rolling out a steady stream of life-changing medicines. Each of the company's drug programs features multiple novel candidates with unique therapeutic properties. None of these candidates can be found by other current methods. Verseon's fast-growing pipeline addresses major human diseases in the areas of cardiometabolic disorders and cancers. The company's supporters and advisors include multiple Nobel laureates, former heads of R&D of major pharmaceutical companies, and various key opinion leaders in medicine.

Walter Jones
Verseon International Corporation
+1 510-225-9000
mediarelations@verseon.com

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