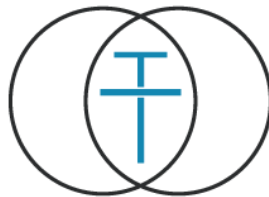


An ioModel Primer

From concept to model to market.
Faster.



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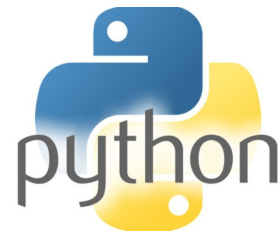
Twin Tech Labs and ioModel at a glance

Twin Tech Labs is a data science and AI firm dedicated to reducing cost and increasing the value of R&D by democratizing access to the power of machine learning and AI. We believe that to realize the full potential of machine learning, we need to put better data, analytical, and modeling tools in the hands of subject matter experts and business analysts. To that end, we developed ioModel.

ioModel is designed to provide existing analytics teams access to powerful machine learning models without having to write code. Furthermore, analysts can then validate and understand the efficacy of models developed on the platform using well understood and proven statistical validation techniques. The ioModel Research Platform will do for machine learning what the spreadsheet did for general computing.

Our commitment to open source and open standards:

The ioModel Research Platform is developed entirely using open source technology and is itself available (without support or warranty) under the GPL License on GitHub. We invite our community to collaborate with us on the roadmap, development, and governance of the Platform. We're committed to working openly and transparently to drive forward analytics, modeling, and innovation.

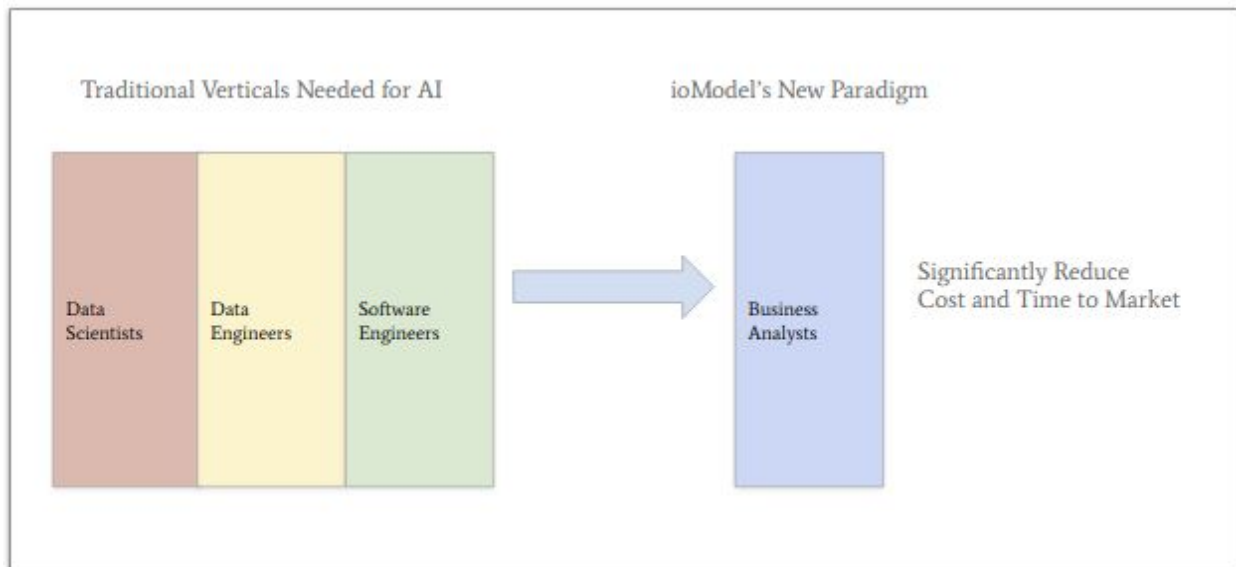


The worlds of analytics and AI are about to converge and change forever

A new AI winter is not coming. Rather, firms that can capitalize on newly available technologies will be able to move faster and deliver more value than their competition.

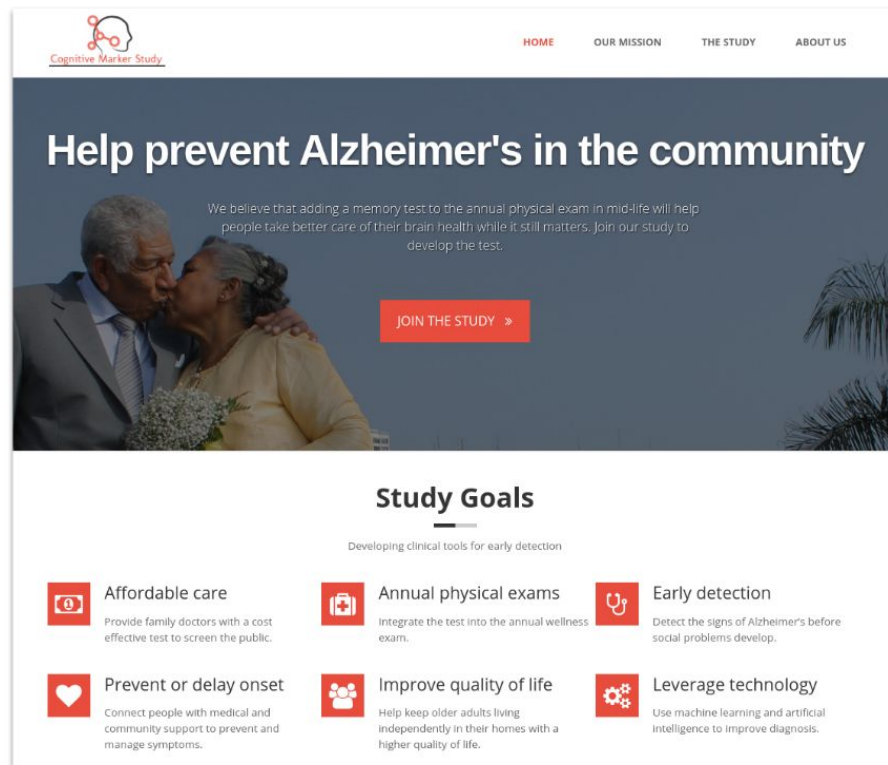
New branches of artificial intelligence like machine learning have evolved rapidly over the last 10 years but have traditionally required sophisticated teams consisting of data engineers, data scientists, and software engineers to effectively develop new insights and models.

ioModel challenges this traditional approach by **putting the power of machine learning in the hands of subject matter experts directly**, unlocking the potential for more rapid innovation at a significantly reduced cost with higher reliability. Rather than waiting for extracted data, relying on engineering teams to deploy and monitor models, and slow, costly development iterations, companies can now directly rely on existing subject matter experts and analysts to understand data and develop and deploy sophisticated models.



ioModel Use Case

Brain-O-Metric, developed through UMass Boston's Psychology department, is a computerized, self-administered instrument designed to be integrated into primary care and forecast the onset of dementia before a doctor can. The ioModel Research Platform was used to develop 2 predictive models and one classification model and is integrated as the predictive back-end into Brain-O-Metric. ioModel enabled researchers in the field of neuropsychology to independently develop machine learning models resulting in 3 papers and 3 posters, advancing the state of alzheimer's research, improving patient outcomes, and lowering cost of care.



Benefits of the ioModel Research Platform:

- Research was done and validated independently without the aid of software engineers
- Researchers were able to directly develop and deploy models into a managed, fault tolerant environment for product integration
- ioModel significantly accelerated the rate of research and development
- Patients can receive diagnostic data earlier, allowing for significant improvements to quality of life
- Cost of palliative care and expensive biological testing (MRI, genetic, etc.) is reduced and eliminated
- UMass advanced researched in a key area and partnered with hospitals and doctors

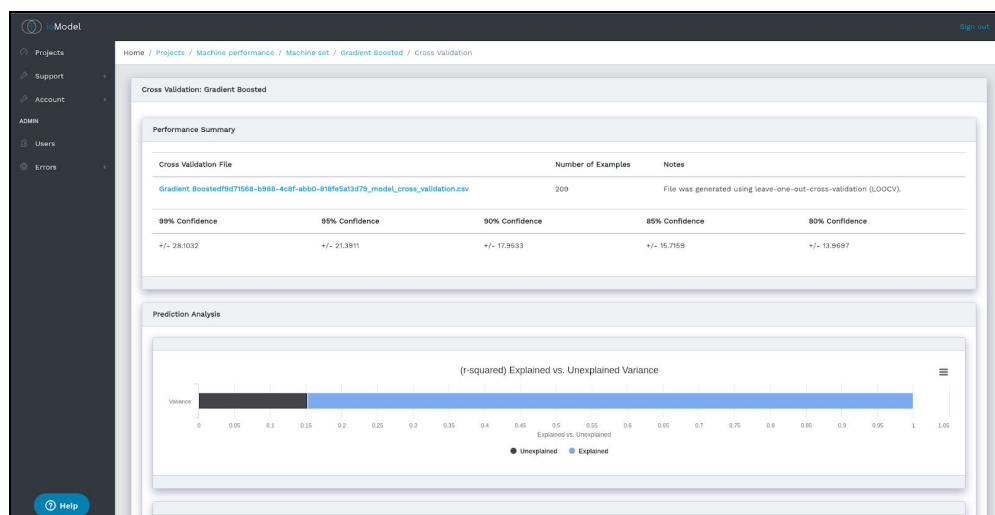
The ioModel Research Platform

Key features:

- Visual exploration of data
- Visual creation of machine learning models
- Cloud Native
- High Performance
- Automation of common analytical and modeling tasks
- Plays well with R, Python, and Excel for product extension and customization
- All models instantly deployed and available as web APIs complete with modeling and performance evaluation
- Automate descriptive statistics
- Leave one out cross validation
- Bootstrap prediction confidence intervals
- Exportable CSV cross validation files allow for additional processing and analysis in R/Excel.

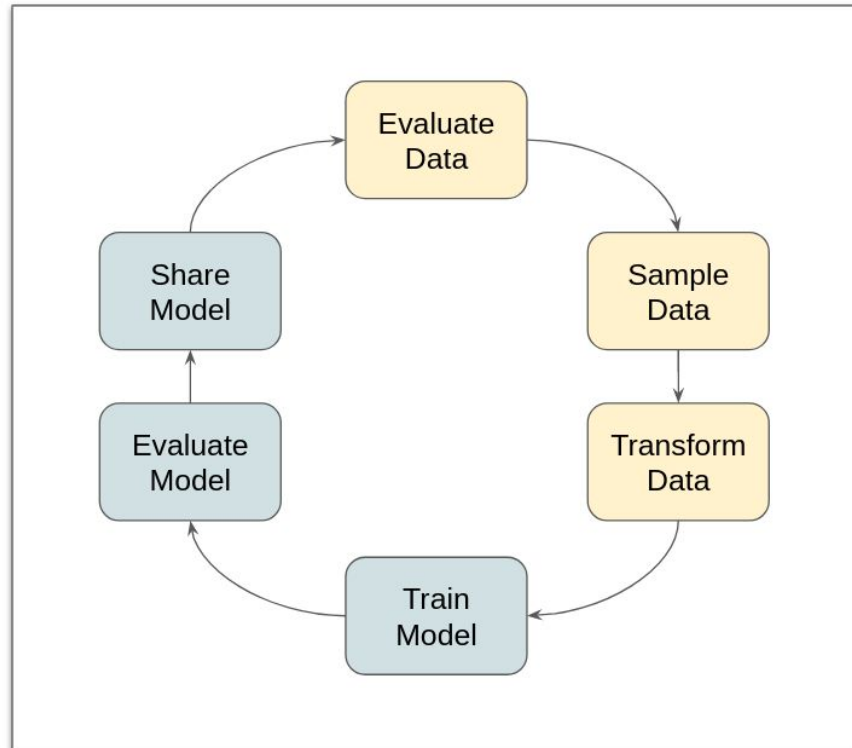
Features support for both predictors and classifiers with the following models:

- Support Vector Machine
- Multiple Logistic Regression
- Decision Trees
- Gradient Boosting
- Random Forest
- Deep Neural Networks



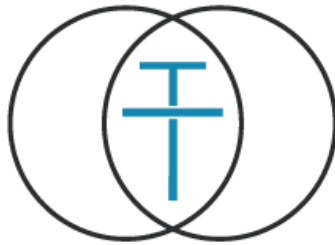
The ioModel Workflow

Using ioModel, analysts can very rapidly move through every stage of the research and development process without writing code. Come with your understanding of analytics and domain knowledge and we'll handle the repetitive coding behind the scenes.



Supported transformations:

- Sampling
- Cluster analysis
- Re-coding fields
- Clearing magic values
- Filling N/A values
- Univariate outlier removal
- Slope of longitudinal data
- Data classification
- Remove and rename columns
- Create test/training splits of data
- Automatic management of N/A values



TWINTECH

Join the ioModel Closed Beta:
http://iomodel.io/closed_beta

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