EXXACT

Lose It! / Snap It

FitNow, Inc.

BACKGROUND

One of the world's most popular comprehensive, personal, app-based weight loss programs, Lose It! has helped over 30 million members shed more than 50 million pounds. Available on iOS and Android, Lose It! empowers members to live healthier lives and achieve their weight loss goals through motivation and challenges, coaching, overall health management, and the insights that come from tracking and monitoring daily calories, exercise, and nutrition.

Boston-based Lose It! recently developed a game changing feature called Snap It, the first-ever food photo analysis and tracking technology on the market. With the launch of Snap It, Lose It! is simplifying the food tracking experience, making it even easier for its users to achieve their weight loss and nutrition goals. Snap It uses advanced image recognition technology and its comprehensive food database of over 7 million foods to make meal tracking as easy as snapping a picture. Users simply upload a photo to Lose It! and Snap It will suggest foods it identifies in the photo.

Leading the efforts surrounding the Snap It feature is Dr. Edward Lowe. Dr. Lowe is a senior data scientist for Lose It!, and was previously research professor at Vanderbilt University with multiple years of deep learning methods development research.
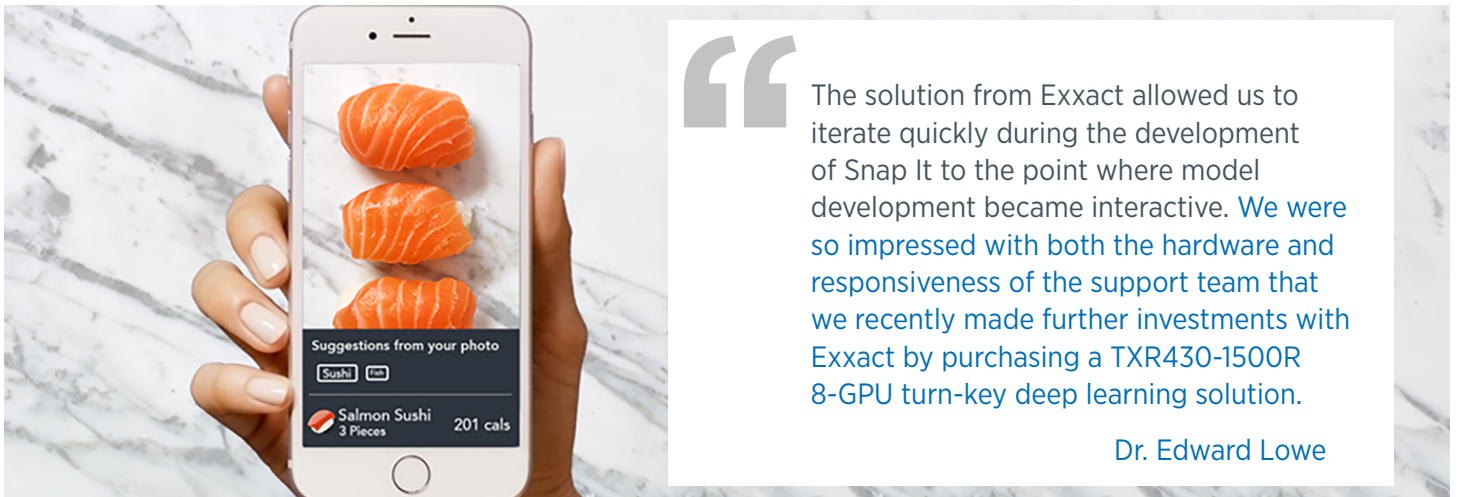
SITUATION

Lose It! provides a variety of ways for users to input food nutritional values, including a searchable food database and barcode scanning. With Snap It, the developers wanted to harness ground-breaking technology and simplify the way users calculate a food's calorie information. Dr. Lowe's extensive knowledge and experience with deep learning frameworks proved instrumental in applying image recognition as a new search option.

Image recognition is the process of identifying and detecting an object or a feature in a digital image or video. This process is used in a variety of applications such as security surveillance or factory automation. Image recognition can be accomplished using several algorithms, including pattern and gradient matching, optical character recognition, and scene change detection. Snap It by Lose It! was the first concept of using image recognition for food photo analysis, something never before attempted within the industry.

CHALLENGE

During the time of Snap It development, using image recognition to calculate food nutritional value was a new field. Dr. Lowe's development required an appliance that could identify the different types of food and process the vast amount of data from uploaded images. Many variables needed to be accounted for during the process, such as picture quality, size ratio, color, lighting, and noise. Dr. Lowe was in need of a GPU solution capable of handling the arduous task of network architecture design and hyper parameter optimization.

> " The solution from Exxact allowed us to iterate quickly during the development of Snap It to the point where model development became interactive. We were so impressed with both the hardware and responsiveness of the support team that we recently made further investments with Exxact by purchasing a TXR430-1500R 8-GPU turn-key deep learning solution.
>
> Dr. Edward Lowe

SOLUTION

To deal with the large datasets, Dr. Lowe needed a system that would enable him to rapidly prototype networks using subsamples of the Snap It dataset. By coordinating with Exxact, he was able to receive a solution fully optimized for his image recognition research. Exxact's team of engineers configured a dual Intel Xeon E5-2620 v3 processor workstation featuring four NVIDIA Maxwell-based GPU accelerators.

With the Exxact workstation on-hand, Dr. Lowe was able to optimize the deep learning framework and begin scaling out to larger networks and datasets. Exxact's system helped Dr. Lowe develop and train his deep learning framework and build out his deep learning information databases to curate hundreds of thousands of images. The result was a baseline methodology for analyzing vast pools of image data processed through Exxact-built Lose It! servers allowing for improved pattern information for food images. The Snap It feature is currently in beta and available to the public, with users submitting data on a daily basis. As the network continues to grow, Snap It will see improvements in photo recognition accuracy and speed. With a robust system to support it, growing networks, and consistent data, Snap It by Lose It! makes food tracking as easy as taking a picture.

To learn more about Snap It, visit www.loseit.com/snapit

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