Analytics and Mathematics in simTree WFM

- Machine Learning

The simTree AI Forecast offers forecasts based on the machine learning method Elastic Net Regression. With large datasets, Elastic Net Regression uncovers intricate patterns and interactions, providing deep insights. Typically, we will be able to find seasonal trends and intramonth patterns that are hard to detect with conventional methods.


- Detection of Outliers in Call History

With the built-in outlier detection tool, you can highlight days that deviate from the forecast not only by total number of calls or average handling time, but also by intraday patterns. Days with high deviation due to special circumstances, such as a holiday or a weather event, can be marked with a new day type. This keeps the forecasts for both the regular day-to-day business, and special days, accurate.

- Simulation Algorithm

simTree is based on simulation. During the simulation, calls are generated according to the forecast. Each call is given to a scheduled agent with the correct skill, who is not occupied by another call. The statistics from the simulation are collected just as during a real day, providing detailed information about service level and agent occupancy. Test the simulation algorithm yourself at https://deepnumbers.se/multiskillsimulation.html
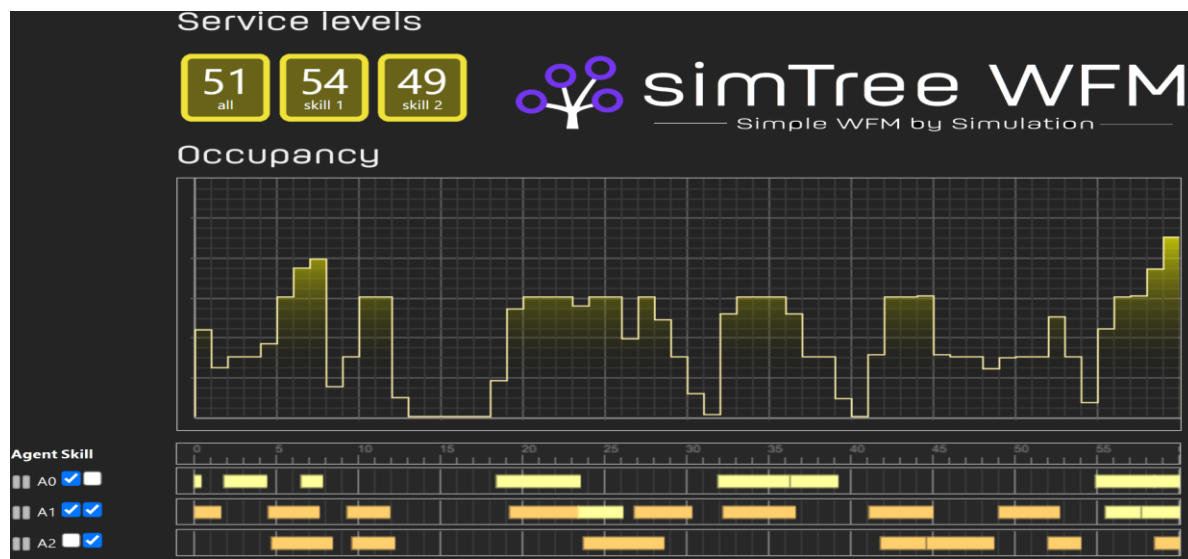
- Multi-Skill Target

As a result of the simulation method, simTree is truly multi-skill compatible. Using methods like Erlang C in a multi-skill call center is not easy. If you run the formulas on the entire call volume, you get one result, and if you run it separately on each skill group, you get another much higher result. Your actual target could be anywhere between these lines (grey field). With simTree we calculate the true number of agents needed using simulation and the actual skill distribution among available agents (black line). More multi-skilled agents result in a lower target, which in turn means you will see the target lowering when you train your staff in more skills.
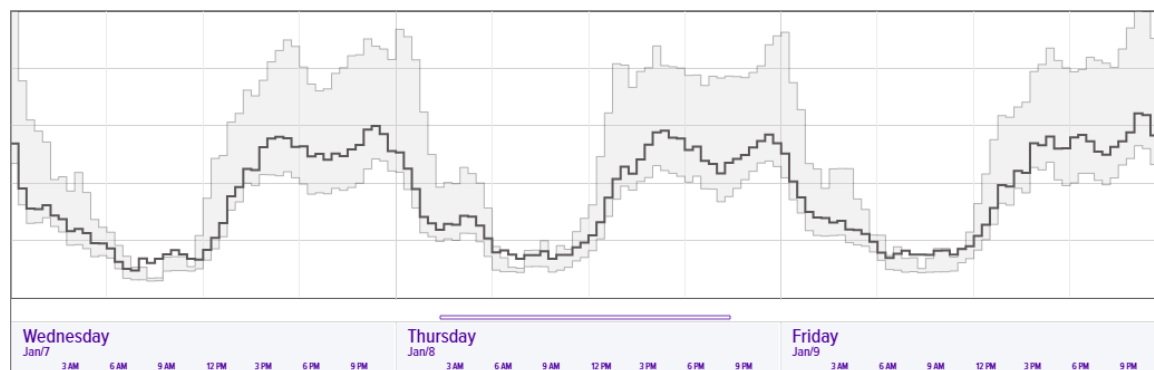
- Advanced Filtering

With the advanced filtering function in simTree, you can easily see all agents with a certain skill or skill combination. This lets you compare the number of skilled agents you have planned with the target for that particular skill. This makes it easy to spot any low-coverage periods for individual skills.
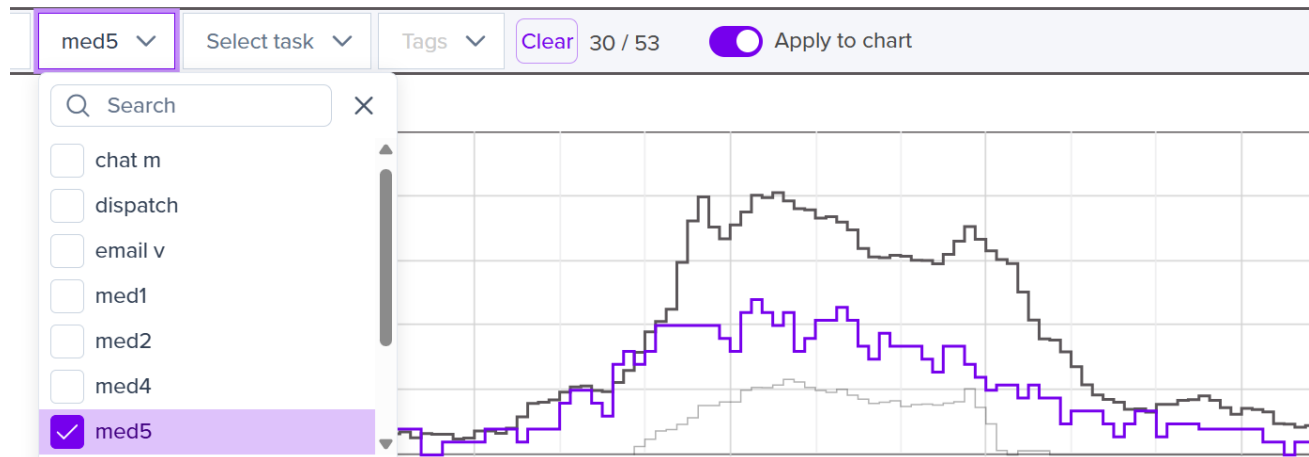

- Service Level Heat-Map

The service level heat-map provides detailed information on service level for all call groups, down to 15-minute intervals, as well as day and period totals. Color coding and tooltips provide warnings for low service level or no coverage. The heat map can be filtered on severity, so you can focus on ensuring the lowest coverage periods are improved first.
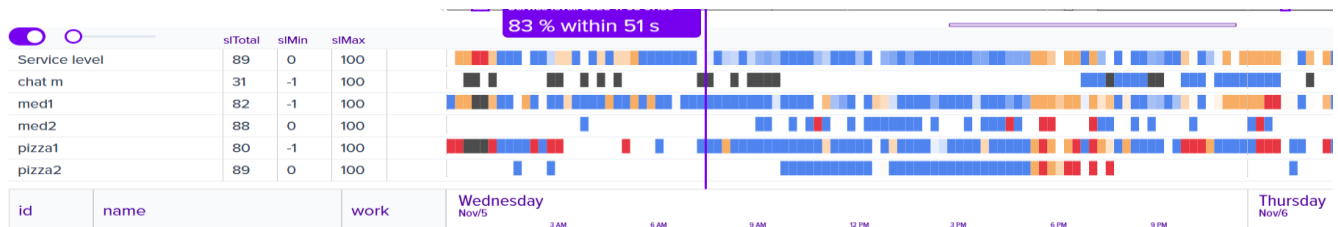
- Occupancy Overlay

As a result of using simulation, simTree is able to calculate the agent occupancy, before it happens. This can be an excellent way to detect agents that are not really needed at that time, or to find times when you should increase your staffing. The occupancy is displayed as an overlay directly in the schedule for easy analysis.
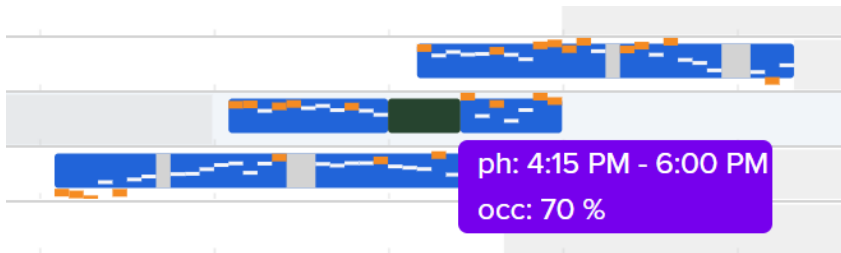
- Inspector

The inspector panel lets you select any time frame of the chart and display key numbers and warnings, such as number of planned agents compared to the target, average service level, and low service level warning for specific skills.