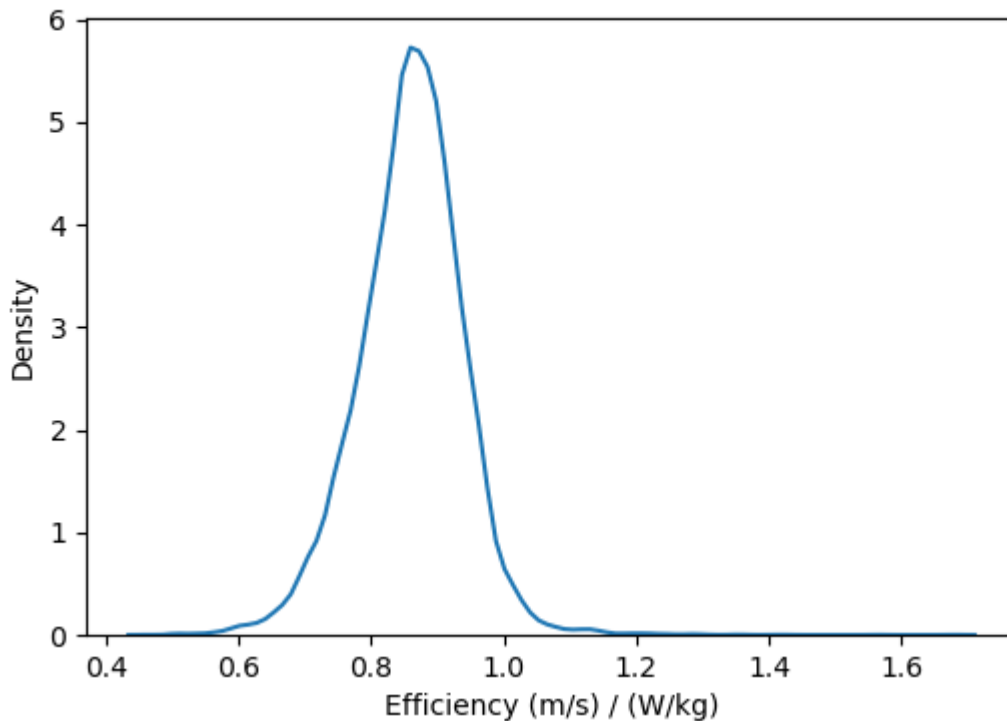


Ken's Race Report: 5000m

Efficiency

To get efficiency, we divide speed by weight normalized power. Intuitively, this represents how efficiently you're converting energy into speed.

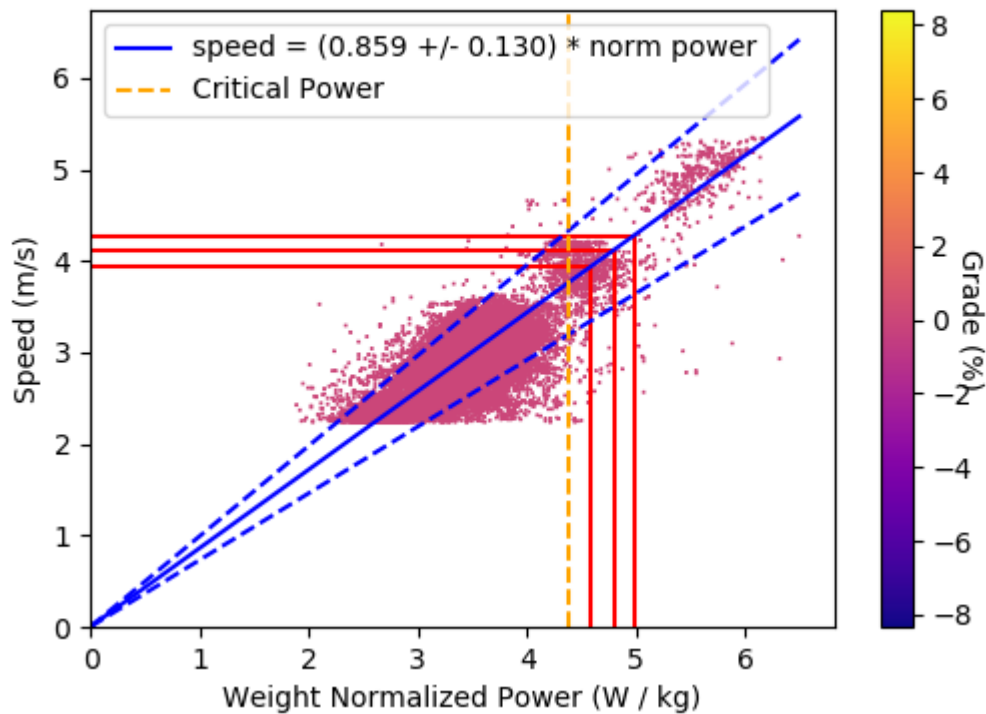


Pace versus Normalized Power

Here is a scatter plot of pace versus normalized power. Each sample is a sample recorded by my Garmin + Stryd (usually one per second) over the past month. The color represents the grade (uphill being positive grade, downhill negative grade).

The orange dotted line represents the critical power. The red lines show the goal race powers recommended by Stryd.

The blue line represents the average efficiency (pace = efficiency * weight normalized power). The dotted blue lines represent the 95 confidence interval for efficiency.



You can see three clear modes: aerobic runs, lactate threshold (tempo) runs, and intervals. Note that I have very little time spent in the top race power recommended by Stryd, which makes me doubtful that I could sustain that for 5k. The middle power range is more plausible.

Expected Race Times

Using the expected and upper/lower bounds on efficiency, we can compute expected race times at each power recommended by Stryd:

Goal Power	Goal Normalized Power	Lower Bound Time	Expected Time	Upper Bound Time
306	4.59	18:22	21:08	24:53
320	4.80	17:33	20:12	23:48
332	4.98	16:55	19:28	22:56

Note that the upper and lower bound times are based on the 95% confidence interval.

From this, it seems that the goal of sub-20 is feasible, but it may be a stretch. Therefore, we will set sub-21 as the ownership goal and sub-20 as the reach goal.

Race Plan

I am going to start aggressively and run 4 minutes for the first kilometer (on pace for a 20-minute 5K). If at 1K my heart rate is above 92.5% HRR, power is above 325W, or I'm not feeling like I'm able to sustain it, I will back off to 4:12 per KM for the next KM. At 2K, I'll start trying to sustain 320W. At 4K, if I have more in the tank, I will up the effort to 332W. At 4.6K, if I have more in the tank, I will kick all out.