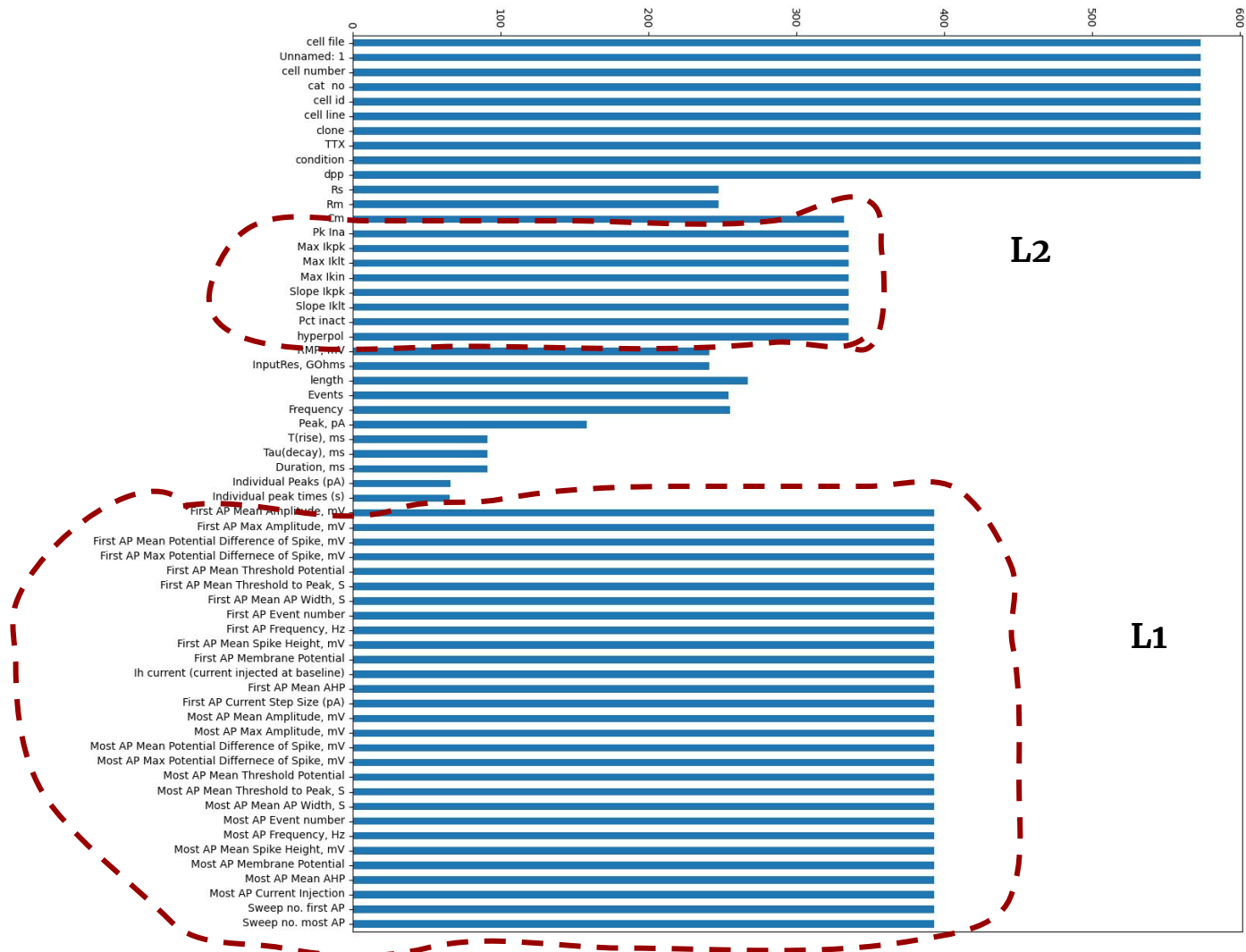


Ephys data: Variation as acceleration

Mohorianu Lab

Liviu Pîrvan
6 October, 2023
Meeting

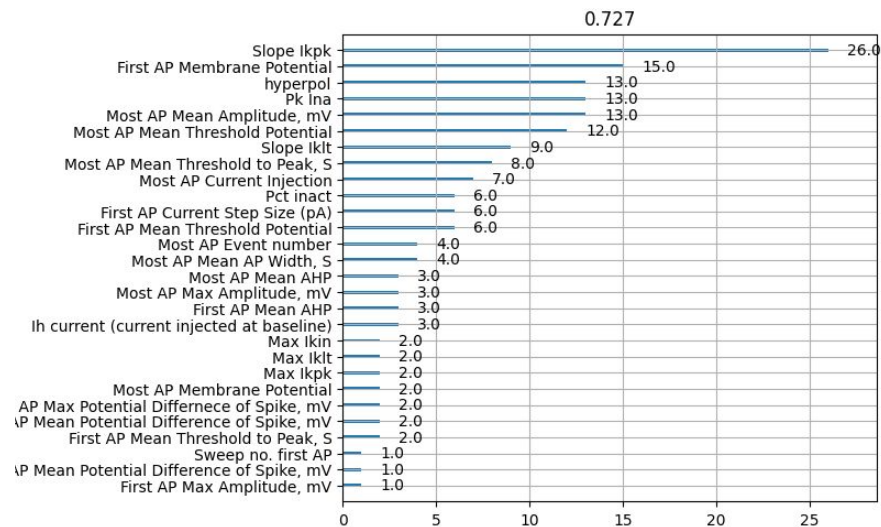
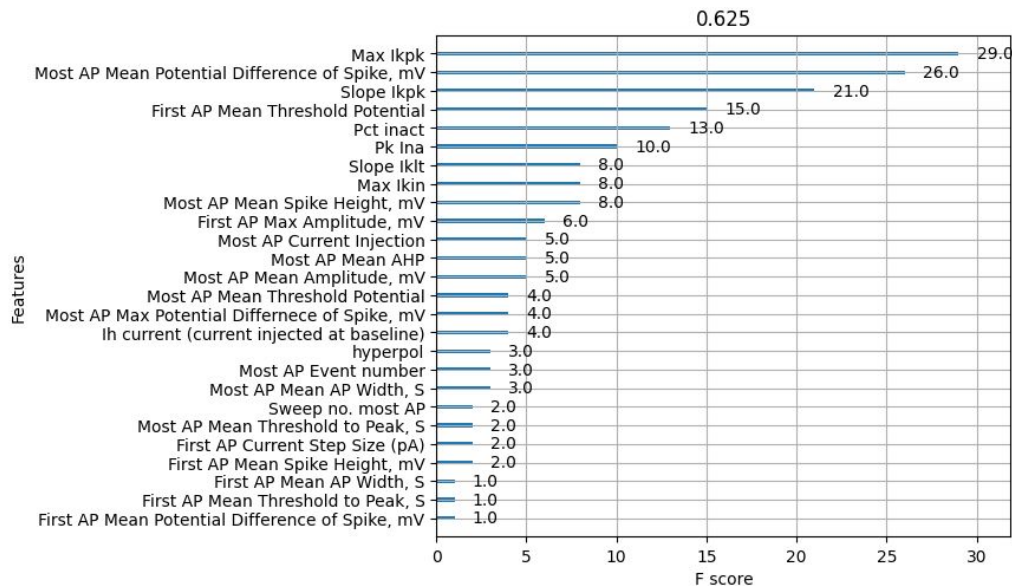
Recap...



Proposed time ranges

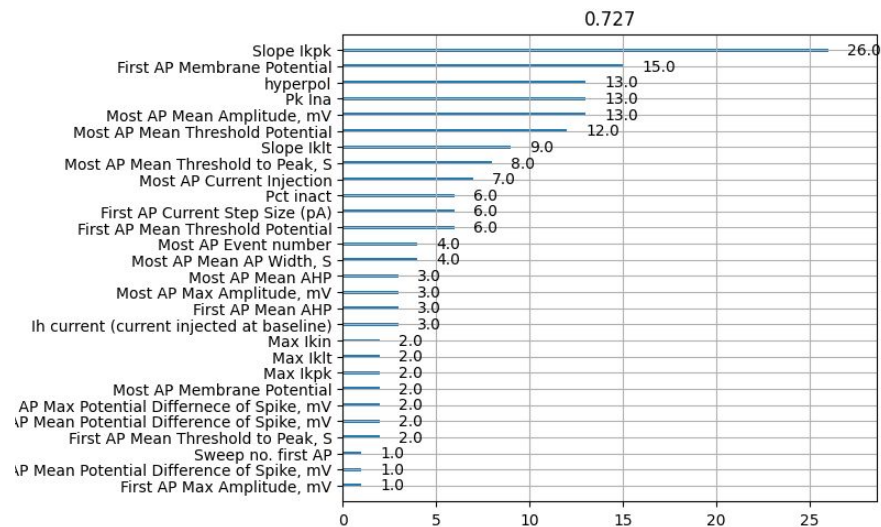
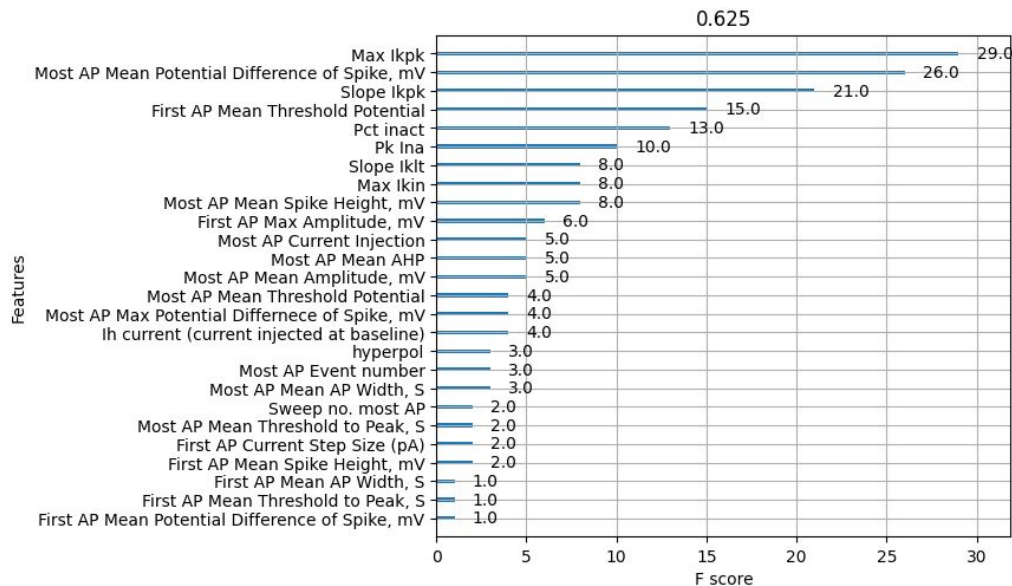
- A:0-14, 15-28, 29-42, 43-56, 57+
- B:0-21, 22-35, 36-49, 50-63, 64+
- C:0-28, 29-56+
- D:0-35, 36-63

A1 and A3

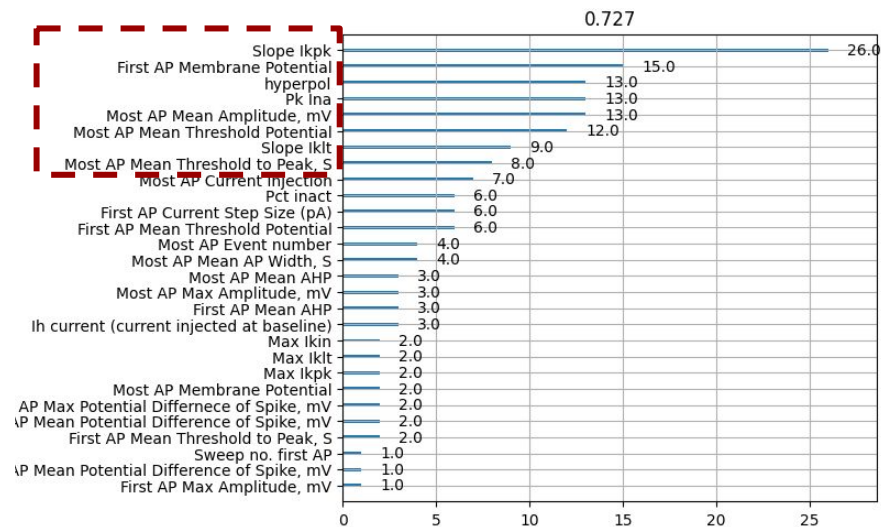
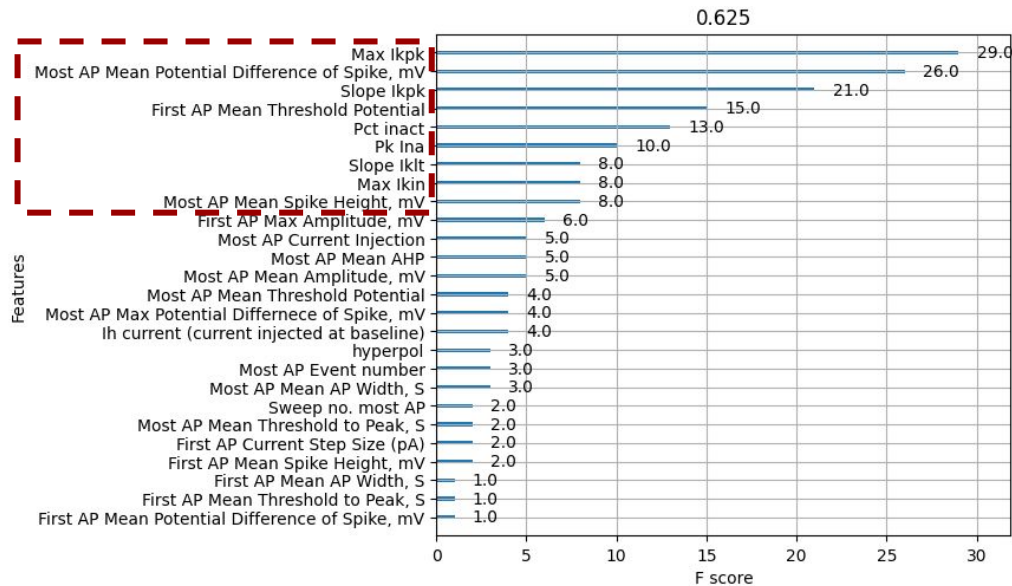


Variation of features within time ranges

A1 and A3



A1 and A3

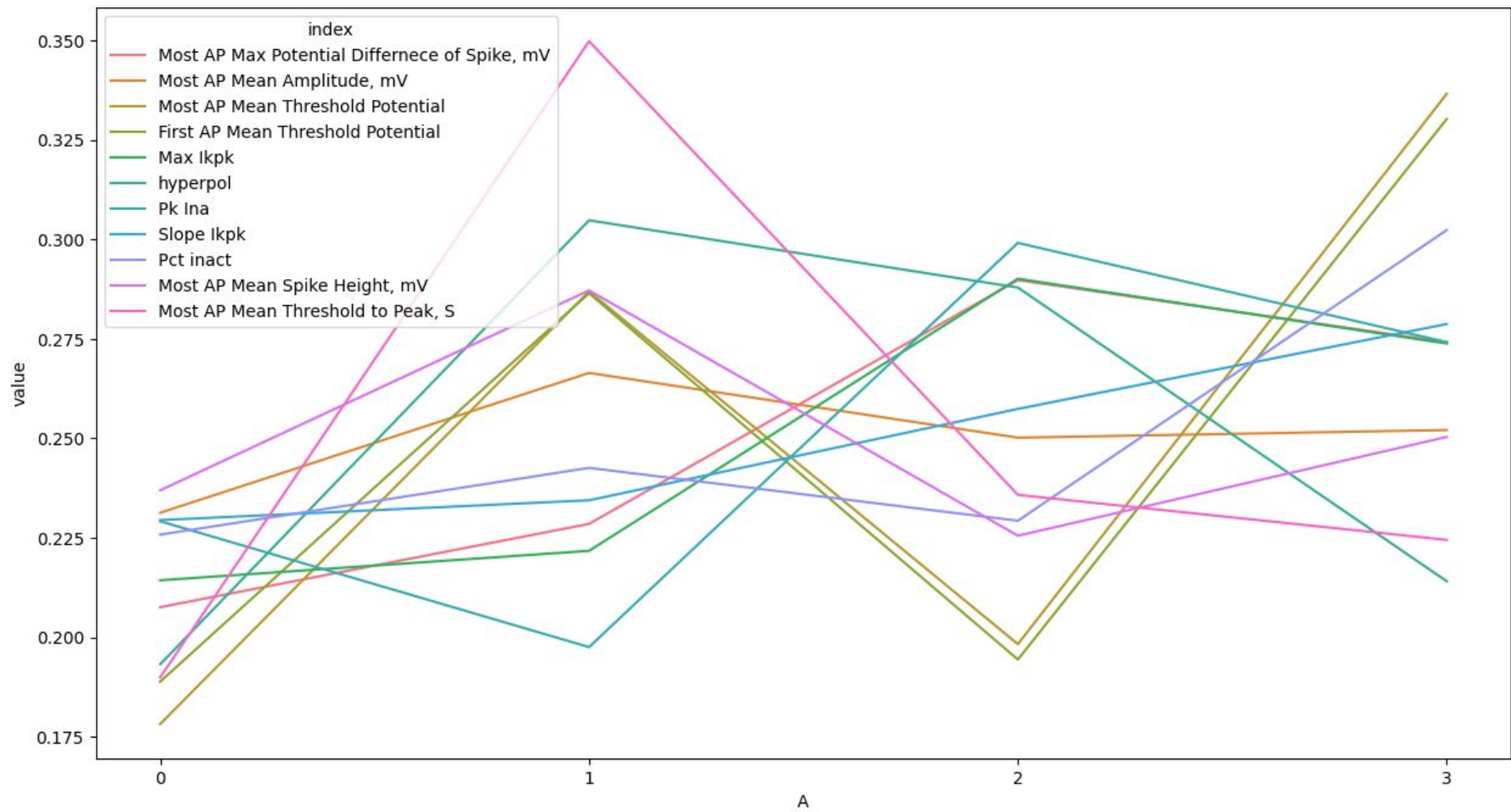


Standard deviation within time ranges

	A	0	1	2	3
Most AP Max Potential Differenece of Spike, mV	13.803003	15.194966	19.268589	18.231086	
Most AP Mean Amplitude, mV	21.547784	24.821519	23.305872	23.485058	
Most AP Mean Threshold Potential	9.710798	15.633829	10.804513	18.338816	
First AP Mean Threshold Potential	11.273093	17.098912	11.604154	19.711425	
Max I_{kpk}	1242.945030	1285.816111	1682.342639	1587.909107	
hyperpol	31.745976	50.073724	47.297961	35.171294	
Pk I_{na}	1348.417411	1162.361247	1760.025297	1613.300155	
Slope I_{kpk}	159.709247	163.172918	179.155221	193.996288	
Pct inact	10.671605	11.464763	10.836739	14.288589	
Most AP Mean Spike Height, mV	18.701880	22.665383	17.800427	19.759214	
Most AP Mean Threshold to Peak, S	0.002002	0.003687	0.002485	0.002366	

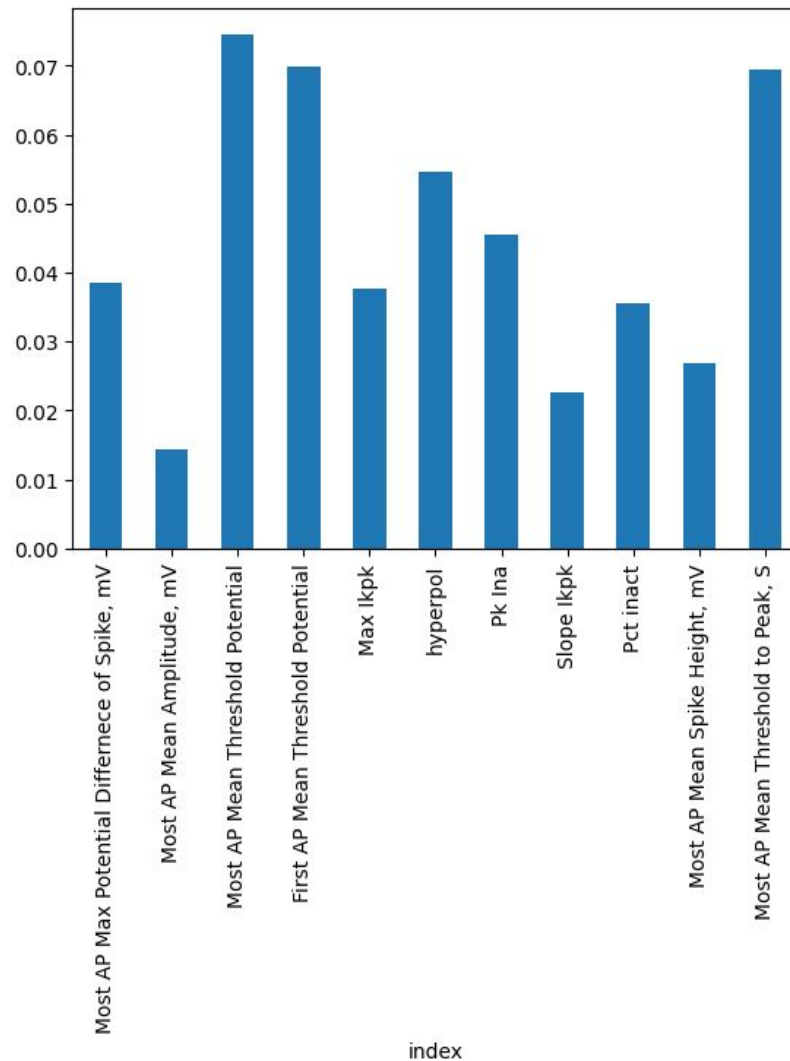
Normalise standard deviation

index	0	1	2	3
Most AP Max Potential Differenece of Spike, mV	0.207571	0.228504	0.289763	0.274161
Most AP Mean Amplitude, mV	0.231298	0.266439	0.250170	0.252093
Most AP Mean Threshold Potential	0.178219	0.286923	0.198292	0.336566
First AP Mean Threshold Potential	0.188868	0.286474	0.194415	0.330243
Max Ikpk	0.214337	0.221730	0.290108	0.273824
hyperpol	0.193233	0.304791	0.287895	0.214082
Pk Ina	0.229163	0.197543	0.299115	0.274179
Slope Ikpk	0.229456	0.234433	0.257394	0.278717
Pct inact	0.225798	0.242580	0.229292	0.302329
Most AP Mean Spike Height, mV	0.236952	0.287169	0.225531	0.250348
Most AP Mean Threshold to Peak, S	0.189932	0.349788	0.235793	0.224487

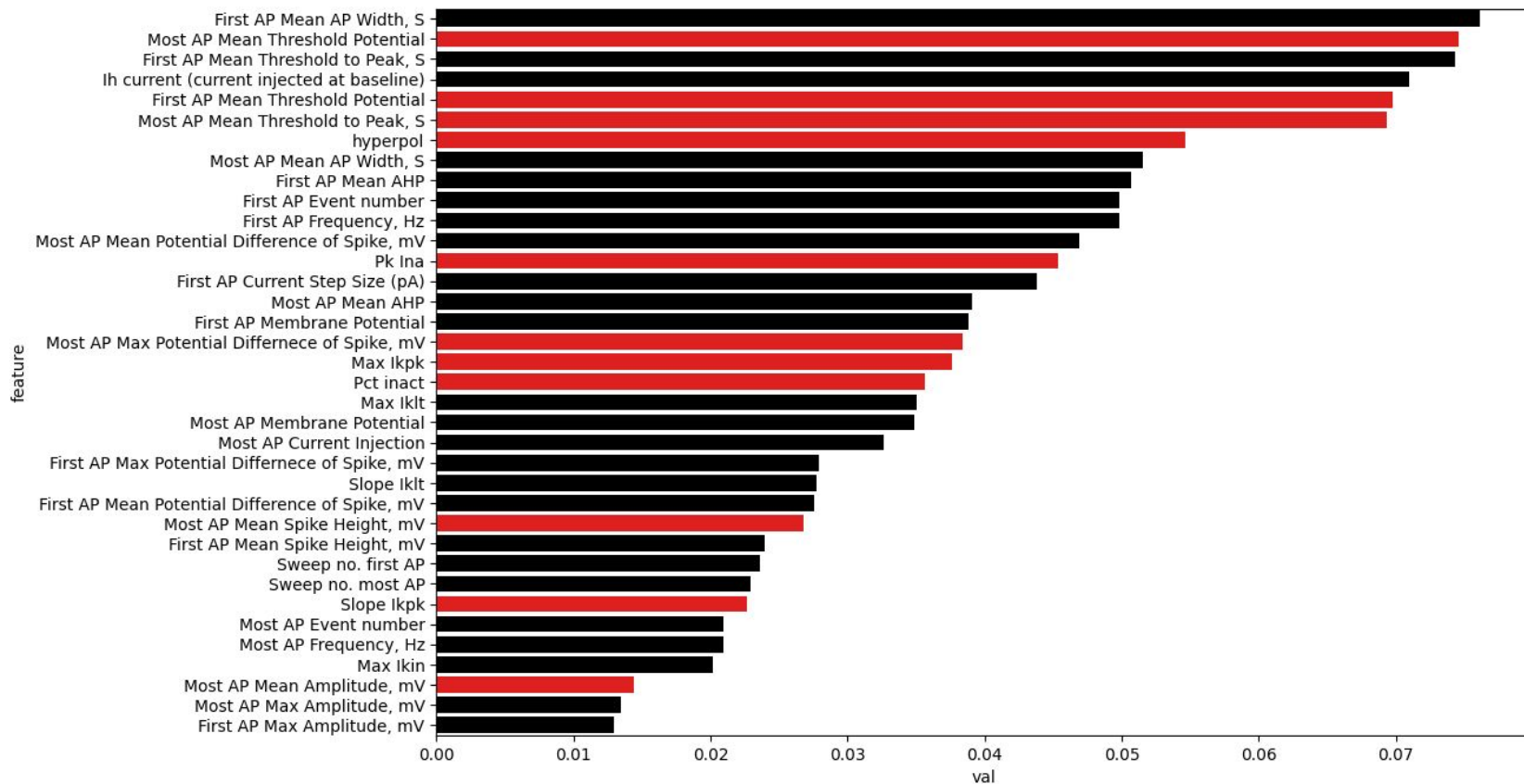


Variation of variation

- How much the standard deviation varies across time ranges?
- Variation of acceleration?



Std of std for all features (red = important features)



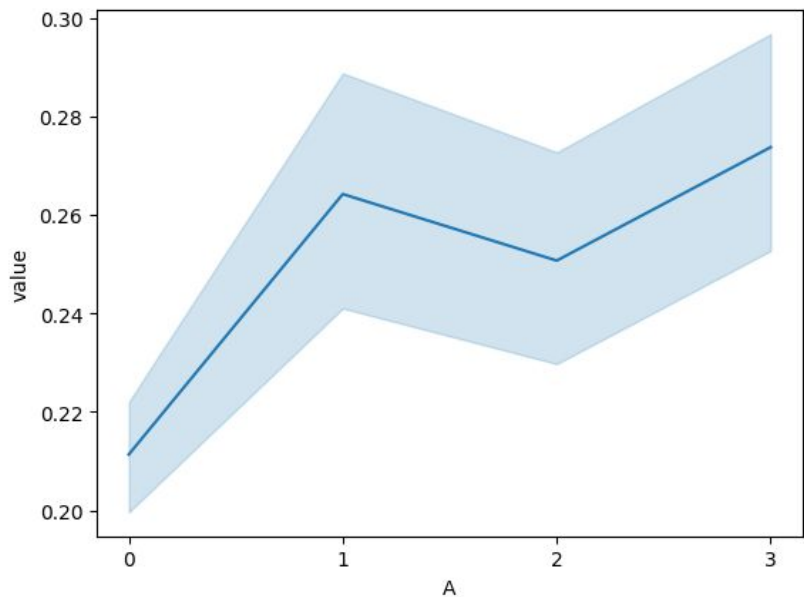
Mean std of features per time range

- Take std of each feature
- Plot mean + confidence interval

	index	0	1	2	3
First AP Max Amplitude, mV	0.235079	0.266658	0.248424	0.249839	
First AP Mean Potential Difference of Spike, mV	0.211632	0.254648	0.256384	0.277336	
First AP Max Potential Differnece of Spike, mV	0.211505	0.254313	0.255774	0.278409	
First AP Mean Threshold Potential	0.188868	0.286474	0.194415	0.330243	
First AP Mean Threshold to Peak, S	0.188335	0.358026	0.223721	0.229918	
First AP Mean AP Width, S	0.200127	0.331896	0.295954	0.172023	
First AP Event number	0.291247	0.261942	0.177632	0.269179	
First AP Frequency, Hz	0.291247	0.261942	0.177632	0.269179	
First AP Mean Spike Height, mV	0.239594	0.285798	0.234797	0.239811	
First AP Membrane Potential	0.222743	0.269529	0.212879	0.294850	
Ih current (current injected at baseline)	0.201050	0.297846	0.322687	0.178417	
First AP Mean AHP	0.207661	0.243658	0.225892	0.322789	
First AP Current Step Size (pA)	0.210931	0.232023	0.244669	0.312376	
Most AP Mean Amplitude, mV	0.231298	0.266439	0.250170	0.252093	
Most AP Max Amplitude, mV	0.232392	0.265109	0.252836	0.249663	
Most AP Mean Potential Difference of Spike, mV	0.199340	0.220786	0.290858	0.289015	
Most AP Max Potential Differnece of Spike, mV	0.207571	0.228504	0.289763	0.274161	
Most AP Mean Threshold Potential	0.178219	0.286923	0.198292	0.336566	
Most AP Mean Threshold to Peak, S	0.189932	0.349788	0.235793	0.224487	
Most AP Mean AP Width, S	0.207528	0.298038	0.291113	0.203322	
Most AP Event number	0.245231	0.273664	0.223903	0.257202	
Most AP Frequency, Hz	0.245231	0.273664	0.223903	0.257202	
Most AP Mean Spike Height, mV	0.236952	0.287169	0.225531	0.250348	
Most AP Membrane Potential	0.233595	0.261857	0.212077	0.292471	
Most AP Mean AHP	0.225991	0.253006	0.217002	0.304001	

Mean features std per time point

Subset features



All features

