EEG Mindfulness Index Report

=== Mindfulness Index (MI) Analysis Summary ===

File: UnicornRecorder_12_05_2025_12_41_310

Analysis Date: 2025-05-22 10:45:11

EDA file used: data/eda_data\opensignals_lsl_500hz_gain1_0007808C0708_2025-04-30_16-32-15.txt

- Window Size: 3 seconds

- Window Overlap: 50.0%

- Frequency Bands: Theta (4, 7.99), Alpha (8, 12.99), Beta (13, 30)

- MI Weights: {'theta_fz': 0.25, 'alpha_po': 0.25, 'faa': 0.2, 'beta_frontal': -0.15, 'eda_norm': -0.15}

- State Thresholds: Focused >= 0.5, Neutral >= 0.37, Unfocused < 0.37

File Information:

- Total Duration: 205.33 seconds (3.42 minutes)

- Analyzed Duration: 204.00 seconds

- EDA Data Available: Yes

Results Summary:

- Total Windows Analyzed: 135

- Average MI Score: 0.5271

- MI Score Range: 0.2776 to 0.9916

Behavioral States:

- Focused: 68 windows (50.4%)

- Neutral: 51 windows (37.8%)

- Unfocused: 16 windows (11.9%)

Output Files:

- JSON Data:

results/mindfulness_analysis_20250522_104508\UnicornRecorder_12_05_2025_12_41_310_2025
0522_104510_mindfulness_results.json

- CSV Data: results/mindfulness_analysis_20250522_104508\UnicornRecorder_12_05_2025_12_41_310_2025
0522_104510_mindfulness_data.csv
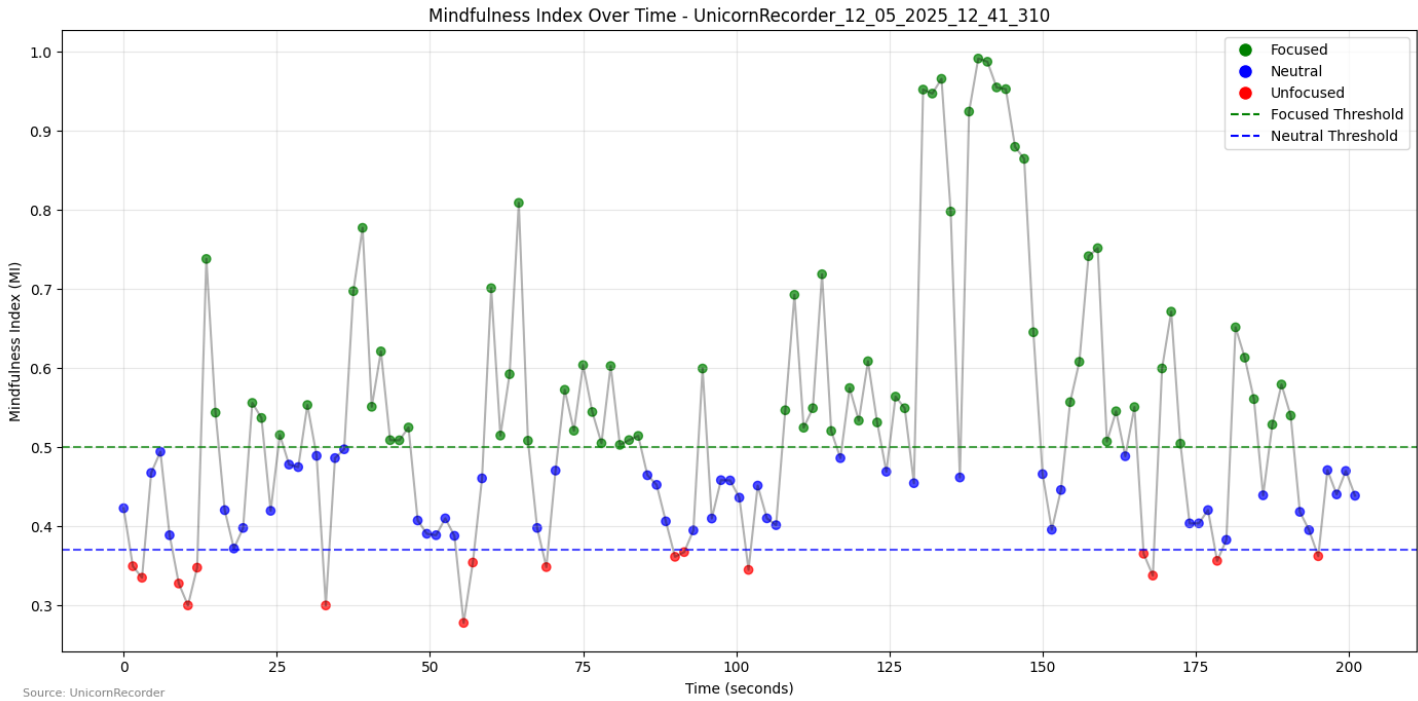
- Simplified MI Data: results/mindfulness_analysis_20250522_104508\UnicornRecorder_12_05_2025_12_41_310_2025
0522_104510_mi_only.csv

- MI Plot: results/mindfulness_analysis_20250522_104508\UnicornRecorder_12_05_2025_12_41_310_2025
0522_104510_mi_timeseries.png
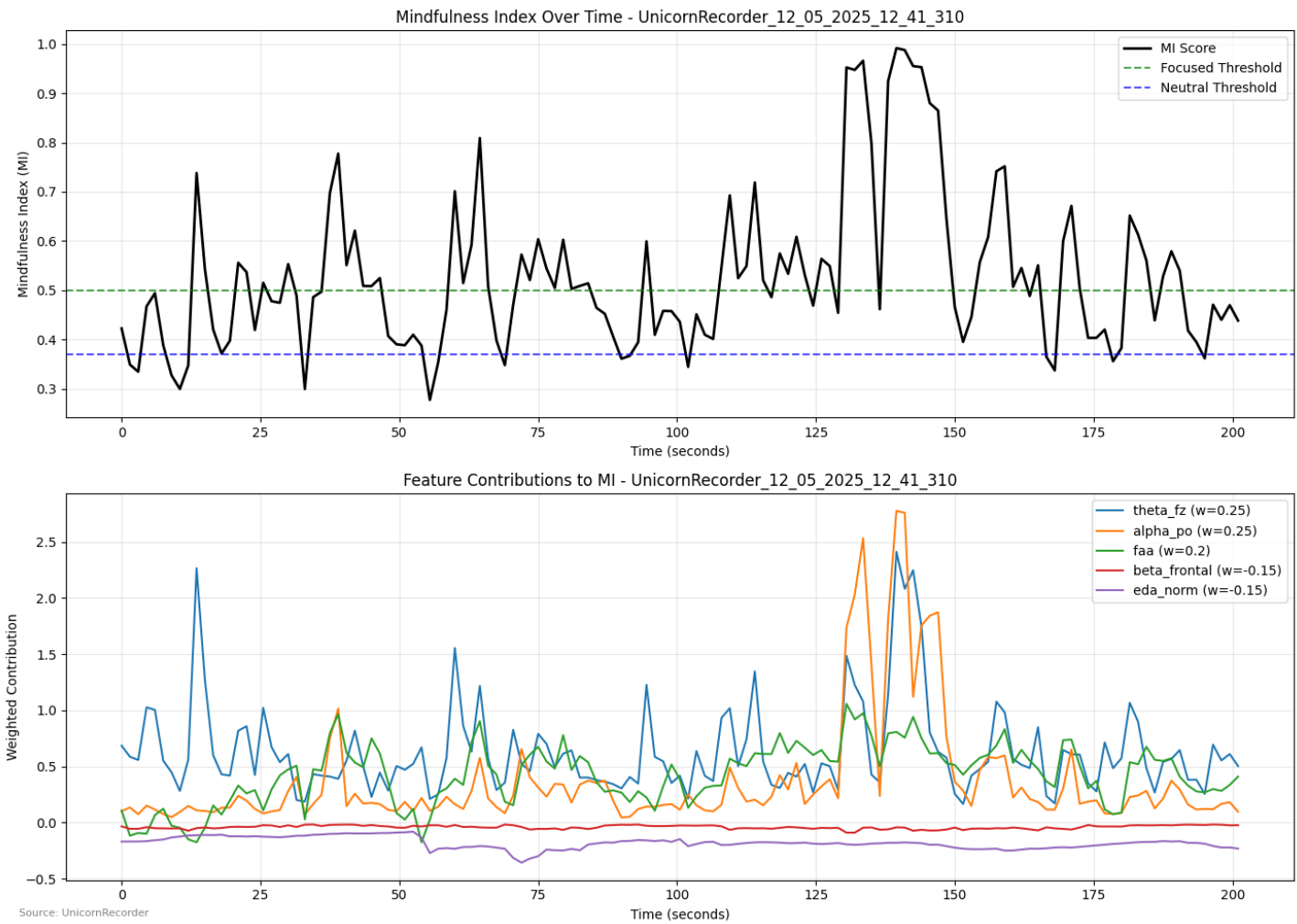
- Feature Plot: results/mindfulness_analysis_20250522_104508\UnicornRecorder_12_05_2025_12_41_310_2025
0522_104510_feature_contributions.png

- State Plot: results/mindfulness_analysis_20250522_104508\UnicornRecorder_12_05_2025_12_41_310_2025
0522_104510_behavioral_states.png

UnicornRecorder_12_05_2025_12_41_310_20250522_104510_mi_timeseries.png

Mindfulness Index Over Time - UnicornRecorder_12_05_2025_12_41_310

Source: UnicornRecorder

UnicornRecorder_12_05_2025_12_41_310_20250522_104510_feature_contributions.png

Mindfulness Index Over Time - UnicornRecorder_12_05_2025_12_41_310

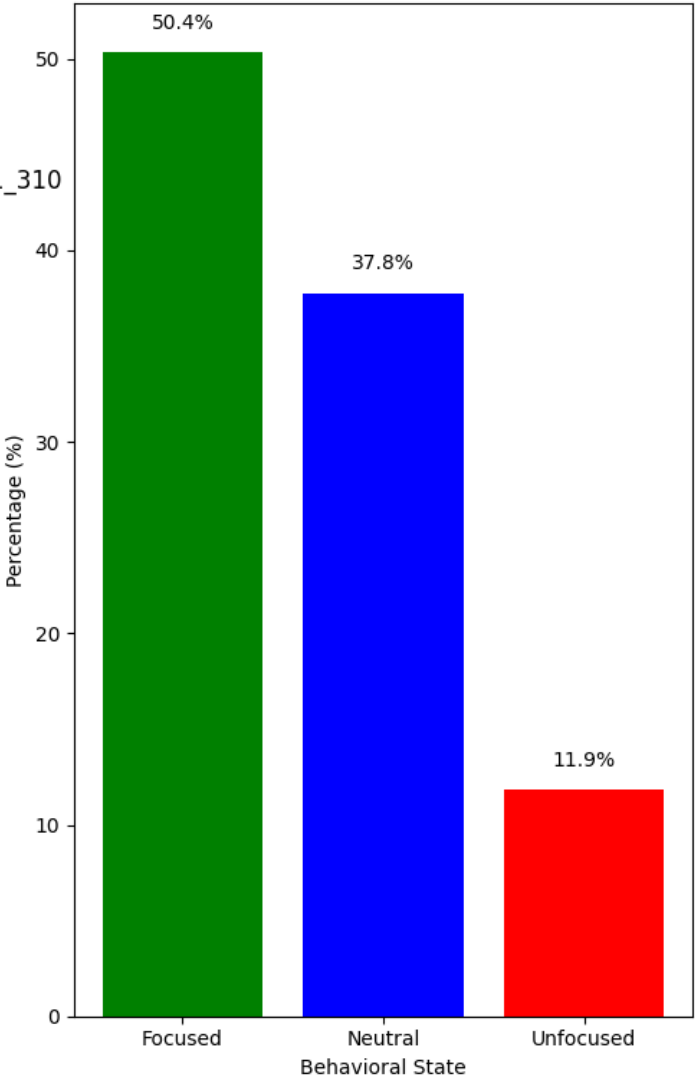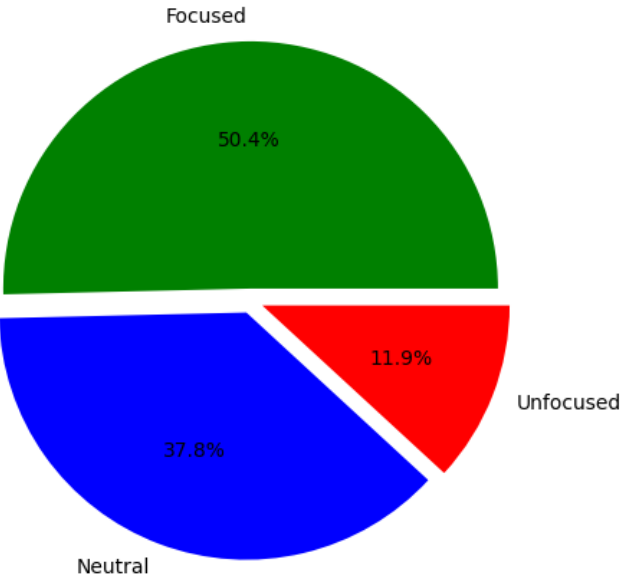Feature Contributions to MI - UnicornRecorder_12_05_2025_12_41_310

Source: UnicornRecorder

UnicornRecorder_12_05_2025_12_41_310_20250522_104510_behavioral_states.png

Percentage of Time in Each State - UnicornRecorder_12_05_2025_

n of Behavioral States - UnicornRecorder_12_05_2025_12_41_310

Source: UnicornRecorder

UnicornRecorder_12_05_2025_12_41_310_20250522_104510_mindfulness_data.csv

timestamp	mi_score	behavioral_state	theta_fz	alpha_po	faa	beta_frontal	eda_norm
0.0	0.4227374273012209	Neutral	2.741368752824309	0.6028797599488	0.553313531080156	6.22864138091070	0.72329264298850874
1.5	0.3493270421437503	Focused	2.345821261934710	0.45388474494221	1.95867552666113	0.747550014165011	1.21299312222958927
3.0	0.3347771867595798	Focused	2.230234837855499	0.99296619752264	1.90446522976906	0.7764755826497	1.77256880131468 66
4.5	0.4674302414170118	Neutral	4.105958143873345	0.6022816044591	0.42500213822856	2.273548950957338	0.81077167715899028
6.0	0.4942347481967008	Neutral	4.015801811894805	0.46519287272579	0.37276835734957	2.69388874549820	0.236534286460532427
7.5	0.3885847698284175	Neutral	2.204221047532462	0.3007369071387	0.91657627171709	1.38445045179811	0.760762694014070 43
9.0	0.3274493512519271	Unfocused	1.790558965702346	1.9152022569043	0.71430339891366	9.3560623513175	0.68831786424864 23
10.5	0.2997522273513938	Unfocused	1.123735417504900	0.23776051730489	0.82354532086070	9.854399555588708	0.783415453900057 23
12.0	0.3475235917413672	Unfocused	2.241910529935120	0.5923827627367803	0.747949334621	0.9486503510794201	0.3730023975914612
13.5	0.7381488567974795	Focused	9.066947538115710	0.4343283561696860	2.8795949306265893	0.9613407547522	0.97555303571888 579
15.0	0.5436181342867076	Focused	5.093024782692740	0.74115063215417806	2.30972312059535	2.9541605781964	0.72380583167862547
16.5	0.4202790954683532	Neutral	2.394983168811850	0.336650628677670	1.86078433562347	0.934708656891963	0.374472935381419163
18.0	0.3717273879179267	Neutral	1.718594296924837	0.52784977731296	0.85476049933228	0.3248465744801	0.4872433028504 13521
19.5	0.3977636599348428	Neutral	1.673398366486442	0.76317138899536	0.498532317293914	1.36289460818826	0.78246697170677306
21.0	0.5555982444337546	Focused	3.271096270055337	0.75182425333911	1.2846611296172708	2.511826526974	0.758166824985979692
22.5	0.5369127830657108	Focused	3.432991154653193	0.77821058636834	1.42974890580897	3.14629467342669	0.628329065361146721
24.0	0.4194336984490842	Neutral	1.696335499588970	0.14848923606983	0.23947729546529	0.9635190670076089	0.331443609340334 88
25.5	0.5153596731975808	Focused	4.088679670220228	0.33230546898438	1.553997186215419	9.685519806179874	0.18412681554502037
27.0	0.4779264201825696	Neutral	2.689627139983940	0.73962190247646	1.047433168077578	0.5753277096231	1.09255869789215 2364
28.5	0.4747427964555176	Neutral	2.151613955131258	0.74452603828956	0.69103784359569	2.0246476439343442	0.787583783538964
30.0	0.5533258274997648	Focused	2.442368640311310	1.0722636587919752	0.48650914356881	2.0761866613489	0.168391465505441733
31.5	0.4890041658812668	Neutral	0.800787641561801	0.16278328731932	0.53432105080840926	0.26263338996429363	0.78871048302021337
33.0	0.2996876151627923	Unfocused	0.749030923126180	0.2881695004196	0.814199116990493	0.8254105762839	0.968844840241417432
34.5	0.4861874249003442	Neutral	1.725345152575110	0.26606414834545	0.23374760811270428	1.1568185622500	0.137290726960077 73
36.0	0.4973004039834848	Neutral	1.673980552723170	0.59888392614758	0.244092672147227	0.4209280977539126	0.7130982590682501
37.5	0.6974140961763807	Focused	1.639942252667113	0.300185148928213	0.39847660758949	0.6639260231185 4	0.84766565747999633
39.0	0.7774605050333767	Focused	1.557838735817974	0.40607378466201	0.89627188141582650	1.128682649727 0	0.59656741494040413
40.5	0.5510488295320312	Focused	2.205440887994032	0.58381183797057	2.1043717464079404	1.194661584750	0.42635722080142 4358
42.0	0.6211406044673561	Focused	3.274360312093611	0.70293523395026	0.52967665975924725	0.8129668491050	0.396494501118873 384
43.5	0.5088421323528672	Focused	2.004543615944457	0.67761945589976	0.2046140085428880	0.6198769207067036	0.6485141097229132
45.0	0.5086448421096376	Focused	0.912986160039340	0.97020539299689	0.92950610317585310	0.364862396994342	0.86467045055383579

46.5	0.5248796674602698 Focused	1.7787505798249866	592365516306822	7449810119432	920623177784056	4625738057055234
48.0	0.4072510812108762 Neutral	1.1398536321742094	511000751031287	77736889073522	3282143258807	96247396547465138
49.5	0.3903865241501867 Neutral	2.0141912037783705	077462731212134	176185715099783	7001895930728	23897782792411 0689
51.0	0.3885857418129968 Neutral	1.8806397701496256	371961358535585	314531494447906	3123437197571	195810595537400057
52.5	0.4099283215265444 Neutral	2.0910104284896924	045885687733869	103093681254951	900794804392655	44742669760309
54.0	0.3877622419013682 Neutral	2.6809700640272877	876895784049190	6.884007809963224	34462461534935	8944330783895534
55.5	0.2776020000608137 Unfocused	0.8433516621006554	135415954155905	3045947484637043	6118805115559481	6832011358413
57.0	0.3539969065843512 Unfocused	1.0042495586446858	564681066132401	22079403029956896	288525704788085	564986093596254
58.5	0.4605031479129087 Neutral	2.3000990604439369	152991682760895	196765180288807	5220999797049152	21804129131599
60.0	0.7011233321196028 Focused	6.2223725095350936	496498037745312	538412121135971	479796375727916	59493816285786
61.5	0.5146654244731707 Focused	3.4439899842985524	842434898575082	761965703989077	6522290860686636	58904783682227
63.0	0.5922809668882454 Focused	2.5290143481376792	227515520887495	76781116291861	2488807201855352	50418364058106
64.5	0.8090662450748551 Focused	4.8696060602755963	051545076082235	166034899954592	88292796496351	5987510445818363
66.0	0.5081595606208227 Focused	2.2922650366684	0.8559301322289075	277598422597623	05858625570882	52720551038 03616
67.5	0.3977957195354942 Neutral	1.1571050188495885	136919780066233	91974406659 2.30484020735826	7892600861601 5336	
69.0	0.3482227214851318 Unfocused	1.4241372658259533	098909850917052	735705238887021	1734264628987365	567482099368053
70.5	0.4703446398178222 Neutral	3.3039347748815849	595250798552324	70861347264980861	2706876669284	97383060108785
72.0	0.5725456891749062 Focused	2.0891372864506336	206585758262325	5883796958956222	6305086661858	28834253215571177
73.5	0.5208206746431457 Focused	1.8321324250583526	154397089326996	254124989343564	1507021617638684	2560764578373
75.0	0.6038284726737336 Focused	3.1637449228450025	011102720991537	464790613133.377885054699348	9001786039048828	
76.5	0.5444574254108328 Focused	2.8055962162837039	224409707525996	23286294168023	38069104838036460	84155294130749
78.0	0.5049208419753436 Focused	1.9785191245958043	787797387444253	983751254609853	5033143565392264	51068142585417
79.5	0.6026672986327608 Focused	2.4548485144647953	550327878844789	4327221284797436	2165957047516	620796535067848
81.0	0.5028478958351457 Focused	2.5731019229875897	138097429614026	409261804815992	925734130934116	8642362272522068
82.5	0.5089322663297177 Focused	1.6010875320830583	2546480936682	619499242768645	17504516600911	96495996246477824
84.0	0.5142286828757828 Focused	1.6052022315535444	9456359870815067	1938122050640537	6848758684589	7091444373741998
85.5	0.4644480814016309 Neutral	1.5138211257192724	093058536217733	9695598589244013	0855195838077	2422514826899476
87.0	0.4523156304087795 Neutral	1.4568910475429494	9512494350318136	9812067058337	173886596729511	63813489418580163
88.5	0.4061222439413625 Neutral	1.3676282965066801	5752693691280984	3354555803401735	173809031913049	79473802404894
90.0	0.3612207726649918 Unfocused	1.2157483437463583	789914716842465	334785016858114	30440642406273605	7199669724624
91.5	0.3672021789561525 Unfocused	1.6249352819428703	2053092040327509	1455575702018343	5418810761074695	985544462441
93.0	0.3946848042397337 Neutral	1.3884834327621105	81357259163453399	42298554156298	18962641422697640	8238169056503
94.5	0.5994749155736556 Focused	4.9047363272182825	680815786867954	16685890094370329	25537360178239	625390671203143

96.0	0.40968979560738	Neutral	2.34319673139132	...
97.5	0.45823916234190	Neutral	2.18224896106841	...
99.0	0.45786059449852	Neutral	1.40931683262900	...
100.5	0.43610104812197	Neutral	1.67040844320875	...
102.0	0.34471085781465	Unfocused	0.85358118777839	...
103.5	0.45136516931365	Neutral	2.54859239304078	...
105.0	0.40994877778240	Neutral	1.66472668936014	...
106.5	0.40128991887186	Neutral	1.48094844469428	...
108.0	0.54664760020098	Focused	3.73148721354733	...
109.5	0.69274419461180	Focused	4.07606125294723	...
111.0	0.52456402006466	Focused	2.00858917006403	...
112.5	0.54928280910223	Focused	2.96397757096455	...
114.0	0.71877039434904	Focused	5.38488884254792	...
115.5	0.52041002559186	Focused	2.17636497875574	...
117.0	0.48609216230975	Neutral	1.34139614622185	...
118.5	0.57476044439129	Focused	1.23525794538697	...
120.0	0.53355163016271	Focused	1.77025187595462	...
121.5	0.60866794002929	Focused	1.63728264254071	...
123.0	0.53124293892747	Focused	2.08747853202583	...
124.5	0.46888783981083	Neutral	1.07821937617479	...
126.0	0.56392132618516	Focused	2.11110516752056	...
127.5	0.54922995048514	Focused	2.00677309415204	...
129.0	0.45439236878090	Neutral	1.15744958714515	...
130.5	0.95238172787651	Focused	5.94171217615758	...
132.0	0.94732679427177	Focused	4.90103654127900	...
133.5	0.96598854295204	Focused	4.31540894257364	...
135.0	0.79807750811047	Focused	1.70716750715580	...
136.5	0.46162466248412	Neutral	1.43486145409682	...
138.0	0.92453178678052	Focused	4.55653743272951	...
139.5	0.99163809058460	Focused	9.65125699869946	...
141.0	0.98758574240218	Focused	8.33179422391528	...
142.5	0.95508918769712	Focused	8.99565685516504	...
144.0	0.95296076999775	Focused	6.99774442619062	...

145.5	0.8799769483038070	Focused	3.2101883823306	7.3728870476815	70800793230489	0247477894466827	1322373267964 7422
147.0	0.8647908203290370	Focused	2.5204493870300	8744971550741442	310919909340377	68466012808695471	314885250649341
148.5	0.6453636713201975	Focused	2.3136884578511700	35479827881574	276479212641958685	1490751257089449	049910590113377
150.0	0.4658836790722008	Neutral	1.0237064071174311	5568969246880	2263476711348405	800730281458600	8960952696820542
151.5	0.3954677437812477	Neutral	0.6598949609134821	38676032614529	97322770231272	1064947337029354	2453753003010 6448
153.0	0.4458289720985556	Neutral	1.6727222291722865	882885418298	3254865485567058	63679365963080	2258220746880917
154.5	0.5569412830655586	Focused	1.9060991047470408	687583029114	2588067466062674	0935441072996034	85862010780440507
156.0	0.6079418531794766	Focused	2.1682972130892621	73338994274649	60622239194119328	368465086172172	5737210491850486
157.5	0.7416290437477558	Focused	4.3098074950949521	295597525976934	43486168764775	0.3369716787473335	5555002070509052
159.0	0.7517871243004348	Focused	3.9224913278827421	392437180646876	759855272165524	350339034841164	6665724638960255
160.5	0.5070355273012550	Focused	2.2674367877353801	892579726951032	36259164256989338	298120173790720	6598332483121645
162.0	0.5453974116116826	Focused	2.0587417686060605	24777513387704	0237746785226	3.340618620970563	606668325372815
163.5	0.4884820635797309	Neutral	1.9424143345199983	395065874360	89660830668229	00440542047847360	86527546007019246
165.0	0.5507259466857070	Focused	3.3954724500307137	292102460908	25382412644241230	5467499231504446	559493816285786
166.5	0.3650981210885411	Unfocused	0.9451838746621096	64322310788926	8348440873846	01784878025724256	732786554527521
168.0	0.3374783601136309	Unfocused	0.6798968109063254	56310920624653	5778980424646225	8444690832460	1234 8632437089522
169.5	0.5995652062153376	Focused	2.5860913842316212	061627360857316	267328407981933	53808683647980	19 4716344131184098
171.0	0.6714451502322276	Focused	2.4384874760788167	076629834911846	94366543711893	8149435974717	28 4789605654675373
172.5	0.5043742030883070	Focused	2.4241001170024896	653589470113	265324117834914	872966564732914	03445675953091685
174.0	0.4035427153741116	Neutral	1.3990853217326708	644735845370229	5243744948927	8714744813095195	85 96255038810036
175.5	0.4036133768757728	Neutral	1.1089411746835087	91378986479402	857200753428408	22610607603236	67 53573340112248
177.0	0.4203412218094389	Neutral	2.8553805321727470	5229070535284865	837294942850	34235886201008984	4153844518037 01
178.5	0.3561240636681907	Unfocused	1.9354363983986629	05987641362693	36763995385117	423370483936298	0873 7011554146334
180.0	0.3826572100806448	Neutral	2.2891293212348663	2380778260270504	374150833279602	38800729443802	244997089038928
181.5	0.6516083747706160	Focused	4.2712917353784	9.910192993705798	6875048649887	42570002681559472	2083682043377562
183.0	0.6132140149969770	Focused	3.5949388000377104	964674624456	2.599175455625633	1568546513578603	69118513576194
184.5	0.5608084499593942	Focused	1.9401938130347225	313257147603753	741961466212931	679428453285476	538928783682112
186.0	0.4390454767655722	Neutral	1.0689842103071305	122835047032708	973924388433601	1638905109707427	498992691333303
187.5	0.5284878084974693	Focused	2.1626380924454748	5282768816427374	2743437423142	153127202526995	1024751594691218
189.0	0.5792725329276440	Focused	2.2693158005380084	94263926217402	3865747765988496	5668606450485	198281840189186665
190.5	0.5399463301989722	Focused	2.5831750841730671	75236155258902	5741119074023569	6388743822569402	124591825563237
192.0	0.4181154409693364	Neutral	1.5231999061723486	371897396762076	455487579269081	2292239496407	2085554047706413
193.5	0.3950000328541498	Neutral	1.5259055986207055	6470271783070	1988219705920483	535202567055328	2090546059250014

195.0	0.3620049390374	202	defocused	1.0183487656515	0.48465123735877	23423908276628	3145533359705934	26047232482409908
196.5	0.4709096215330	984	Neutral	2.7756295371351	4247253391908166	548942875203985	7461893911879627	1.397003840541576
198.0	0.4401657238562	006	Neutral	2.2133212412726	0.66540879431118	7740902680930480	9528319250317676	848632437089522
199.5	0.4699120508666	25	Neutral	2.4428823845651	987239836324405966	8755550103189	6546721416031098	758816184362056115
201.0	0.4385496346111	289	Neutral	2.0104864382907	0.38766399045862	2364739055436722	41575975044817110	5495097931985842

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timestamp	mi_score	behavioral_state
0.0	0.4227374273012292	Neutral
1.5	0.3493270421437503	Unfocused
3.0	0.3347771867595798	Unfocused
4.5	0.4674302414170118	Neutral
6.0	0.494234748196708	Neutral
7.5	0.3885847698284175	Neutral
9.0	0.3274493512519271	Unfocused
10.5	0.2997522273513938	Unfocused
12.0	0.3475235917413672	Unfocused
13.5	0.7381488567974795	Focused
15.0	0.5436181342867077	Focused
16.5	0.4202790954683521	Neutral
18.0	0.3717273879179267	Neutral
19.5	0.3977636599348428	Neutral
21.0	0.5559824443375646	Focused
22.5	0.5369127830657103	Focused
24.0	0.4194336984490842	Neutral
25.5	0.5153596731975808	Focused
27.0	0.4779264201825954	Neutral
28.5	0.4747427964555177	Neutral
30.0	0.5533258274997649	Focused
31.5	0.4890041658812656	Neutral
33.0	0.2996876151627923	Unfocused
34.5	0.486187424900342	Neutral
36.0	0.4973004039834818	Neutral
37.5	0.6974140961763867	Focused
39.0	0.7774605050333787	Focused
40.5	0.5510488295320312	Focused
42.0	0.6211406044673561	Focused
43.5	0.5088421323528672	Focused
45.0	0.508644842109636	Focused

46.5	0.5248796674602693	Focused
48.0	0.4072510812108763	Neutral
49.5	0.3903865241501867	Neutral
51.0	0.3885857418129968	Neutral
52.5	0.4099283215265448	Neutral
54.0	0.3877762241901382	Neutral
55.5	0.2776020000608137	Unfocused
57.0	0.353996906584352	Unfocused
58.5	0.4605031479129037	Neutral
60.0	0.7011233321196028	Focused
61.5	0.5146654244731707	Focused
63.0	0.5922809668882454	Focused
64.5	0.8090662450748551	Focused
66.0	0.508159560620827	Focused
67.5	0.3977957195354942	Neutral
69.0	0.3482227214851313	Unfocused
70.5	0.4703446398178222	Neutral
72.0	0.5725456891749062	Focused
73.5	0.5208206746431417	Focused
75.0	0.603828472673736	Focused
76.5	0.5444574254108323	Focused
78.0	0.5049208419753436	Focused
79.5	0.6026672986327603	Focused
81.0	0.5028478958351457	Focused
82.5	0.5089322663297177	Focused
84.0	0.5142286828757828	Focused
85.5	0.4644480814016393	Neutral
87.0	0.4523156304087795	Neutral
88.5	0.4061222439413627	Neutral
90.0	0.3612207726649918	Unfocused
91.5	0.3672021789561525	Unfocused
93.0	0.394684804239737	Neutral
94.5	0.5994749155736556	Focused

96.0	0.4096897956073847	Neutral
97.5	0.4582391623419658	Neutral
99.0	0.4578605944985276	Neutral
100.5	0.4361010481219781	Neutral
102.0	0.3447108578146511	Unfocused
103.5	0.451365169313657	Neutral
105.0	0.4099487777824048	Neutral
106.5	0.4012899188718609	Neutral
108.0	0.5466476002009819	Focused
109.5	0.6927441946118027	Focused
111.0	0.5245640200646629	Focused
112.5	0.5492828091022315	Focused
114.0	0.7187703943490411	Focused
115.5	0.520410025591866	Focused
117.0	0.4860921623097519	Neutral
118.5	0.5747604443912951	Focused
120.0	0.5335516301627169	Focused
121.5	0.6086679400292923	Focused
123.0	0.5312429389274779	Focused
124.5	0.4688878398108356	Neutral
126.0	0.5639213261851663	Focused
127.5	0.5492299504851416	Focused
129.0	0.4543923687809056	Neutral
130.5	0.9523817278765188	Focused
132.0	0.9473267942717774	Focused
133.5	0.9659885429520494	Focused
135.0	0.7980775081104737	Focused
136.5	0.4616246624841263	Neutral
138.0	0.9245317867805248	Focused
139.5	0.9916380905846084	Focused
141.0	0.9875857424021822	Focused
142.5	0.9550891876971286	Focused
144.0	0.9529607699977556	Focused

145.5	0.8799769483038075	Focused
147.0	0.8647908203290319	Focused
148.5	0.6453636713201975	Focused
150.0	0.4658836790722008	Neutral
151.5	0.3954677437812477	Neutral
153.0	0.4458289720985519	Neutral
154.5	0.5569412830655887	Focused
156.0	0.6079418531794766	Focused
157.5	0.7416290437477553	Focused
159.0	0.7517871243004343	Focused
160.5	0.5070355273012551	Focused
162.0	0.5453974116116828	Focused
163.5	0.4884820635797394	Neutral
165.0	0.5507259466857044	Focused
166.5	0.3650981210885416	Unfocused
168.0	0.3374783601136309	Unfocused
169.5	0.5995652062153315	Focused
171.0	0.6714451502322216	Focused
172.5	0.504374203088307	Focused
174.0	0.403542715374116	Neutral
175.5	0.4036133768757726	Neutral
177.0	0.4203412218094339	Neutral
178.5	0.3561240636681907	Unfocused
180.0	0.3826572100806431	Neutral
181.5	0.6516083747706104	Focused
183.0	0.6132140149969777	Focused
184.5	0.5608084499593949	Focused
186.0	0.4390454767655722	Neutral
187.5	0.5284878084974693	Focused
189.0	0.5792725329276404	Focused
190.5	0.5399463301989722	Focused
192.0	0.4181154409693351	Neutral
193.5	0.395000032854193	Neutral

195.0	0.3620049390374262	Unfocused
196.5	0.4709096215330934	Neutral
198.0	0.4401657238562061	Neutral
199.5	0.4699120508666251	Neutral
201.0	0.4385496346111286	Neutral