# Weekly Work Report 2/21/2025

## This Week

* Organize and summarize all my work and schedule a meeting with new members to introduce and review my work.
* Got Gai’s time synchronize function

- Explored different window size of Aha! Moments

df\_filtered = df\_matrix[(df\_matrix['subject'] == subject) & (df\_matrix['session'] == session)].sort\_values(by='min\_unix\_time', ascending=True)

if len(df\_filtered) > 0:

df\_acc = pd.read\_csv(f"{project\_dir}/Subject\_{subject}/Subject\_{subject}\_Session\_{session}\_Preprocessing\_Acc.csv")

df\_bvp = pd.read\_csv(f"{project\_dir}/Subject\_{subject}/Subject\_{subject}\_Session\_{session}\_Preprocessing\_Bvp.csv")

df\_gsr = pd.read\_csv(f"{project\_dir}/Subject\_{subject}/Subject\_{subject}\_Session\_{session}\_Preprocessing\_Gsr.csv")

df\_temp = pd.read\_csv(f"{project\_dir}/Subject\_{subject}/Subject\_{subject}\_Session\_{session}\_Preprocessing\_Temp.csv")

df\_pupil = pd.read\_csv(f"{project\_dir}/Subject\_{subject}/Subject\_{subject}\_Session\_{session}\_Preprocessing\_Pupil.csv")

puzzle\_start = df\_filtered['min\_unix\_time'].iloc[0]

min\_time\_stamp = min(df\_acc['timestamp'].iloc[0], df\_bvp['timestamp'].iloc[0], df\_gsr['timestamp'].iloc[0], df\_temp['timestamp'].iloc[0])

puzzle\_timestamp\_offset = puzzle\_start - min\_time\_stamp

**Gai**: The timestamp from first line of empadica csv file

df\_empadica['timestamp'].iloc[0]

**Xiaoting:** The timestamp from first line of Acc csv file

df\_acc['timestamp'].iloc[0]

**Updated my code:**

min(df\_acc['timestamp'].iloc[0],

df\_bvp['timestamp'].iloc[0],

df\_gsr['timestamp'].iloc[0],

df\_temp['timestamp'].iloc[0])

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **windowsize\_from\_to** | **RF** | **KNN** | **DT** | **XGB** |
| 10\_-20\_-10 | 0.558095952 | 0.5118065967016492 | 0.51011994 | 0.5324212893553223 |
| 10\_-19\_-9 | 0.5562218890554723 | 0.5119940029985007 | 0.5155547226386806 | 0.5164917541229386 |
| 10\_-18\_-8 | 0.5639055472263869 | 0.5178035982008995 | 0.5286731634182908 | 0.5314842578710645 |
| 10\_-17\_-7 | 0.5622188905547226 | 0.5119940029985007 | 0.532983508 | 0.5267991004497751 |
| 10\_-16\_-6 | 0.5593855376545522 | 0.5091794679655302 | 0.5224803297115025 | 0.5297864368677407 |
| 10\_-15\_-5 | 0.5561797752808989 | 0.5058052434456929 | 0.5194756554307116 | 0.5249063670411985 |
| 10\_-14\_-4 | 0.5700636942675159 | 0.5161109029599101 | 0.5372798801049082 | 0.5335331584863244 |
| 10\_-13\_-3 | 0.5582833583208395 | 0.5073088455772113 | 0.5297976011994003 | 0.5236131934032984 |
| 10\_-12\_-2 | 0.5474137931034483 | 0.5089955022488756 | 0.5208020989505248 | 0.5223013493253373 |
| 10\_-11\_-1 | 0.5667166416791605 | 0.5200524737631185 | 0.5153673163418291 | 0.5305472263868066 |
| 10\_-10\_0 | 0.5459145427286357 | 0.5129310344827587 | 0.512743628 | 0.5393553223388305 |
| 10\_-9\_1 | 0.5633433283358321 | 0.51368066 | 0.5245502248875562 | 0.53392054 |
| 10\_-8\_2 | 0.5597826086956522 | 0.5005622188905547 | 0.52023988 | 0.5414167916041979 |
| 10\_-7\_3 | 0.5710269865067467 | 0.5043103448275862 | 0.5153673163418291 | 0.5341079460269865 |
| 9\_-19\_-10 | 0.5490721649484536 | 0.5070103092783506 | 0.5154639175257731 | 0.52 |
| 9\_-18\_-9 | 0.5538144329896907 | 0.5084536082474227 | 0.5218556701030928 | 0.5315463917525773 |
| 9\_-17\_-8 | 0.549165121 | 0.5046382189239332 | 0.5217480931766646 | 0.5188620902906618 |
| 9\_-16\_-7 | 0.5607091321377036 | 0.5151515151515151 | 0.5151515151515151 | 0.5320552463409606 |
| 9\_-15\_-6 | 0.546353523 | 0.5006180469715699 | 0.5121549237742068 | 0.5222496909765142 |
| 9\_-14\_-5 | 0.5475159760874047 | 0.49618635332921046 | 0.5108225108225108 | 0.5130900845186559 |
| 9\_-13\_-4 | 0.5560824742268041 | 0.5096907216494846 | 0.514020619 | 0.5158762886597938 |
| 9\_-12\_-3 | 0.5474226804123712 | 0.5057731958762887 | 0.5105154639175258 | 0.52 |
| 9\_-11\_-2 | 0.5509278350515464 | 0.5028865979381443 | 0.5218556701030928 | 0.5282474226804124 |
| 9\_-10\_-1 | 0.5536082474226804 | 0.5096907216494846 | 0.5175257731958763 | 0.5329896907216495 |
| 9\_-9\_0 | 0.5620618556701031 | 0.523298969 | 0.5204123711340206 | 0.5284536082474227 |
| 9\_-8\_1 | 0.5655670103092784 | 0.523298969 | 0.511340206 | 0.5290721649484537 |
| 9\_-7\_2 | 0.55452484 | 0.5161822304679448 | 0.5075242218099361 | 0.5440115440115441 |
| 9\_-6\_3 | 0.5409193980622552 | 0.49762935477221193 | 0.520511235 | 0.5184498041640899 |
| 8\_-18\_-10 | 0.550057274 | 0.5085910652920962 | 0.5104238258877434 | 0.511340206 |
| 8\_-17\_-9 | 0.5505154639175258 | 0.5024054982817869 | 0.5248568155784651 | 0.5191294387170676 |
| 8\_-16\_-8 | 0.5474118185982593 | 0.5084745762711864 | 0.5020613834173157 | 0.5064131928538709 |
| 8\_-15\_-7 | 0.5431646439203114 | 0.4991985344630181 | 0.500343485 | 0.5271353331806732 |
| 8\_-14\_-6 | 0.5342497136311569 | 0.5085910652920962 | 0.5111111111111111 | 0.5225658648339061 |
| 8\_-13\_-5 | 0.5264604810996564 | 0.49805269186712486 | 0.5063001145475372 | 0.5150057273768613 |
| 8\_-12\_-4 | 0.5463917525773195 | 0.5163802978235968 | 0.5195876288659794 | 0.5200458190148912 |
| 8\_-11\_-3 | 0.5422680412371134 | 0.49736540664375717 | 0.5120274914089347 | 0.5234822451317297 |
| 8\_-10\_-2 | 0.5583046964490264 | 0.5076746849942726 | 0.5216494845360825 | 0.5349369988545246 |
| 8\_-9\_-1 | 0.5651775486827033 | 0.5186712485681558 | 0.520504009 | 0.5253150057273769 |
| 8\_-8\_0 | 0.5537227949599084 | 0.5063001145475372 | 0.5168384879725086 | 0.5353951890034364 |
| 8\_-7\_1 | 0.5547411818598259 | 0.5100778744846541 | 0.5206138341731562 | 0.5320659642693542 |
| 8\_-6\_2 | 0.5520952599038241 | 0.5095030913670712 | 0.5307991756354477 | 0.5367529196244561 |
| 8\_-5\_3 | 0.55423341 | 0.49496567505720823 | 0.5196796338672769 | 0.5334096109839817 |
| 7\_-17\_-10 | 0.5706185567010309 | 0.4896907216494845 | 0.5149484536082474 | 0.5244845360824743 |
| 7\_-16\_-9 | 0.540582324 | 0.5130121102808555 | 0.5176500901829425 | 0.509920124 |
| 7\_-15\_-8 | 0.5586189126513785 | 0.5320793609894358 | 0.5137851069312033 | 0.5181654212831744 |
| 7\_-14\_-7 | 0.540721649 | 0.502319588 | 0.5172680412371135 | 0.5087628865979381 |
| 7\_-13\_-6 | 0.5375096674400619 | 0.5150812064965197 | 0.5101830368651714 | 0.5225573601443672 |
| 7\_-12\_-5 | 0.5516885795308069 | 0.502706883 | 0.5047692704305233 | 0.5019334880123744 |
| 7\_-11\_-4 | 0.542665635 | 0.517143594 | 0.4980665119876257 | 0.5060582624387728 |
| 7\_-10\_-3 | 0.5511729827275071 | 0.505800464 | 0.5003866976024749 | 0.5243619489559165 |
| 7\_-9\_-2 | 0.545360825 | 0.5157216494845361 | 0.5043814432989691 | 0.5203608247422681 |
| 7\_-8\_-1 | 0.560937903 | 0.5248647255861891 | 0.5289873743880443 | 0.5351713475908271 |
| 7\_-7\_0 | 0.5466254507985574 | 0.532715095 | 0.5136527563111798 | 0.5306543019062339 |
| 7\_-6\_1 | 0.5565284573783157 | 0.5042492917847026 | 0.5266546484676796 | 0.5400463559103785 |
| 7\_-5\_2 | 0.5467181467181467 | 0.49034749034749037 | 0.5222651222651222 | 0.5323037323037323 |
| 7\_-4\_3 | 0.5299717005402624 | 0.49446874196038076 | 0.536917932 | 0.5268844867507075 |
| 6\_-16\_-10 | 0.5399116347569956 | 0.5228276877761414 | 0.5092783505154639 | 0.514580265 |
| 6\_-15\_-9 | 0.535924617 | 0.5020612485276796 | 0.5055948174322733 | 0.5073616018845701 |
| 6\_-14\_-8 | 0.5346097201767305 | 0.5025036818851252 | 0.5022091310751104 | 0.4995581737849779 |
| 6\_-13\_-7 | 0.5406599882144961 | 0.5008839127872716 | 0.5203299941072481 | 0.5176782557454331 |
| 6\_-12\_-6 | 0.5315262227460223 | 0.4938126104890984 | 0.5044195639363582 | 0.5002946375957572 |
| 6\_-11\_-5 | 0.5332940483205657 | 0.4994107248084856 | 0.5223924572775486 | 0.5023571007660578 |
| 6\_-10\_-4 | 0.5316642120765832 | 0.515758468 | 0.5019145802650957 | 0.5263622974963181 |
| 6\_-9\_-3 | 0.5458026509572901 | 0.5290132547864507 | 0.5148748159057437 | 0.5128129602356406 |
| 6\_-8\_-2 | 0.5421083627797408 | 0.5141342756183745 | 0.5176678445229682 | 0.5161955241460542 |
| 6\_-7\_-1 | 0.5438493231312537 | 0.5164802825191289 | 0.5097115950559152 | 0.5303119482048264 |
| 6\_-6\_0 | 0.5420835785756327 | 0.49440847557386697 | 0.5241318422601531 | 0.5344320188346086 |
| 6\_-5\_1 | 0.5386878493674611 | 0.5098558399529274 | 0.5095616357752281 | 0.5266254780817887 |
| 6\_-4\_2 | 0.5324904439870626 | 0.5042634519259042 | 0.5219053219641282 | 0.5283740076448104 |
| 6\_-3\_3 | 0.5388007054673721 | 0.4929453262786596 | 0.5314520870076426 | 0.5164609053497943 |
| 5\_-15\_-10 | 0.5367697594501718 | 0.5127147766323024 | 0.5109965635738831 | 0.504467354 |
| 5\_-14\_-9 | 0.5132347885871433 | 0.5111722241320041 | 0.5101409419044345 | 0.5187349604675147 |
| 5\_-13\_-8 | 0.5359229975936748 | 0.5029219663114473 | 0.5115159848745273 | 0.5238913716053627 |
| 5\_-12\_-7 | 0.5269852182880715 | 0.512547267 | 0.48882777586799586 | 0.519422482 |
| 5\_-11\_-6 | 0.5273289790305947 | 0.5104847026469577 | 0.5190787212100378 | 0.5207975249226539 |
| 5\_-10\_-5 | 0.529553265 | 0.5230240549828179 | 0.5199312714776633 | 0.5268041237113402 |
| 5\_-9\_-4 | 0.5334936447956029 | 0.518722089 | 0.5190656131913431 | 0.5108210237031948 |
| 5\_-8\_-3 | 0.529532967 | 0.5133928571428571 | 0.5140796703296703 | 0.5034340659340659 |
| 5\_-7\_-2 | 0.5341572262272571 | 0.49742533470648814 | 0.5115001716443529 | 0.5149330587023687 |
| 5\_-6\_-1 | 0.5417095777548918 | 0.4963954685890834 | 0.5132166151733608 | 0.5245451424648129 |
| 5\_-5\_0 | 0.5497597803706246 | 0.502745367 | 0.5085792724776939 | 0.5353466026080989 |
| 5\_-4\_1 | 0.5411522633744856 | 0.5013717421124828 | 0.5058299039780522 | 0.5116598079561042 |
| 5\_-3\_2 | 0.5440521083304766 | 0.5022283167637984 | 0.5090846760370243 | 0.527254028 |
| 5\_-2\_3 | 0.5414667580534612 | 0.5075394105551748 | 0.5263879369431117 | 0.518848526 |
| 4\_-14\_-10 | 0.5284653465346535 | 0.5020627062706271 | 0.5045379537953796 | 0.47813531353135313 |
| 4\_-13\_-9 | 0.5224927775484935 | 0.5101114321089558 | 0.5088732975650021 | 0.49607924061081304 |
| 4\_-12\_-8 | 0.5185643564356436 | 0.48886138613861385 | 0.49174917491749176 | 0.5243399339933993 |
| 4\_-11\_-7 | 0.5313531353135313 | 0.511963696 | 0.49834983498349833 | 0.4966996699669967 |
| 4\_-10\_-6 | 0.5329760923330585 | 0.5090684253915911 | 0.4987633965375103 | 0.5206100577081616 |
| 4\_-9\_-5 | 0.5315203955500618 | 0.5080346106304079 | 0.5014421096003296 | 0.5166872682323856 |
| 4\_-8\_-4 | 0.511742892 | 0.5179233621755254 | 0.49814585908529047 | 0.5129789864029666 |
| 4\_-7\_-3 | 0.5059744540585085 | 0.5055624227441285 | 0.5179233621755254 | 0.5121549237742068 |
| 4\_-6\_-2 | 0.5175113308611454 | 0.5084466419447878 | 0.5018541409147095 | 0.5129789864029666 |
| 4\_-5\_-1 | 0.5376698229724166 | 0.5100864553314121 | 0.5030876904075752 | 0.5142033758748457 |
| 4\_-4\_0 | 0.5423868312757202 | 0.5016460905349794 | 0.5275720164609053 | 0.5329218106995884 |
| 4\_-3\_1 | 0.5427631578947368 | 0.5201480263157895 | 0.5086348684210527 | 0.5238486842105263 |
| 4\_-2\_2 | 0.5330867242087958 | 0.5273325113029182 | 0.530209618 | 0.5203452527743526 |
| 4\_-1\_3 | 0.5293875873407317 | 0.5178791615289766 | 0.5228113440197287 | 0.5347307850390465 |
| 3\_-13\_-10 | 0.5273477812177503 | 0.5051599587203303 | 0.4891640866873065 | 0.5113519091847265 |
| 3\_-12\_-9 | 0.5054151624548736 | 0.5121196493037649 | 0.5100567302733368 | 0.5033522434244456 |
| 3\_-11\_-8 | 0.5190721649484537 | 0.5072164948453608 | 0.5123711340206185 | 0.49226804123711343 |
| 3\_-10\_-7 | 0.49562081401339514 | 0.5311695002575991 | 0.49304482225656876 | 0.5131375579598145 |
| 3\_-9\_-6 | 0.5051493305870237 | 0.5308959835221421 | 0.4866117404737384 | 0.49691040164778577 |
| 3\_-8\_-5 | 0.5247167868177137 | 0.504119464 | 0.49948506694129763 | 0.4866117404737384 |
| 3\_-7\_-4 | 0.518022657 | 0.5077239958805355 | 0.5133882595262615 | 0.5113285272914521 |
| 3\_-6\_-3 | 0.5288362512873327 | 0.48455200823892897 | 0.48764160659114314 | 0.49742533470648814 |
| 3\_-5\_-2 | 0.5074626865671642 | 0.5151827071538857 | 0.5012866700977869 | 0.534740093 |
| 3\_-4\_-1 | 0.5095115681233933 | 0.480719794 | 0.513624679 | 0.5089974293059126 |
| 3\_-3\_0 | 0.5154162384378211 | 0.5087358684480987 | 0.4943473792394656 | 0.5195272353545735 |
| 3\_-2\_1 | 0.5290190035952748 | 0.4987159732922445 | 0.480225989 | 0.5192604006163328 |
| 3\_-1\_2 | 0.5228556753980482 | 0.5110426296866974 | 0.5243965074473549 | 0.5285053929121726 |
| 3\_0\_3 | 0.5572675911658963 | 0.5300462249614792 | 0.5218284540318439 | 0.5562403697996918 |
| 2\_-12\_-10 | 0.495532646 | 0.5202749140893471 | 0.5037800687285223 | 0.5051546391752577 |
| 2\_-11\_-9 | 0.48695054945054944 | 0.49381868131868134 | 0.5068681318681318 | 0.507554945 |
| 2\_-10\_-8 | 0.48936170212765956 | 0.5092656142759094 | 0.5010295126973233 | 0.5030885380919699 |
| 2\_-9\_-7 | 0.5044612216884008 | 0.5428963623884695 | 0.5044612216884008 | 0.5003431708991077 |
| 2\_-8\_-6 | 0.5188743994509266 | 0.5017158544955388 | 0.48936170212765956 | 0.5072065888812629 |
| 2\_-7\_-5 | 0.514070007 | 0.5058339052848319 | 0.5024021962937543 | 0.5147563486616334 |
| 2\_-6\_-4 | 0.518188058 | 0.5126973232669869 | 0.48249828414550444 | 0.47975291695264244 |
| 2\_-5\_-3 | 0.5329218106995884 | 0.509602195 | 0.46982167352537724 | 0.49108367626886146 |
| 2\_-4\_-2 | 0.5171232876712328 | 0.4931506849315068 | 0.5061643835616438 | 0.5171232876712328 |
| 2\_-3\_-1 | 0.5 | 0.5068493150684932 | 0.5075342465753425 | 0.4965753424657534 |
| 2\_-2\_0 | 0.5267123287671233 | 0.5068493150684932 | 0.5006849315068493 | 0.5280821917808219 |
| 2\_-1\_1 | 0.5013698630136987 | 0.4965753424657534 | 0.5082191780821917 | 0.5267123287671233 |
| 2\_0\_2 | 0.5445205479452054 | 0.5164383561643836 | 0.5219178082191781 | 0.5321917808219178 |
| 2\_1\_3 | 0.5534246575342465 | 0.5219178082191781 | 0.5226027397260274 | 0.5616438356164384 |
| 1\_-11\_-10 | 0.4881565396498455 | 0.5025746652935118 | 0.4727085478887745 | 0.48300720906282185 |
| 1\_-10\_-9 | 0.48712667353244077 | 0.48918640576725025 | 0.4685890834191555 | 0.513903193 |
| 1\_-9\_-8 | 0.49742533470648814 | 0.5159629248197735 | 0.4933058702368692 | 0.48712667353244077 |
| 1\_-8\_-7 | 0.46446961894953653 | 0.5046343975283213 | 0.529351184 | 0.5108135942327497 |
| 1\_-7\_-6 | 0.5015447991761071 | 0.49536560247167866 | 0.4922760041194645 | 0.5015447991761071 |
| 1\_-6\_-5 | 0.46446961894953653 | 0.4881565396498455 | 0.518022657 | 0.4819773429454171 |
| 1\_-5\_-4 | 0.4794238683127572 | 0.49691358024691357 | 0.5041152263374485 | 0.492798354 |
| 1\_-4\_-3 | 0.45790554414784396 | 0.4928131416837782 | 0.48459958932238195 | 0.47741273100616016 |
| 1\_-3\_-2 | 0.4722792607802875 | 0.4938398357289528 | 0.5071868583162218 | 0.4856262833675565 |
| 1\_-2\_-1 | 0.4722792607802875 | 0.5092402464065708 | 0.49075975359342916 | 0.4681724845995893 |
| 1\_-1\_0 | 0.48973305954825463 | 0.486652977 | 0.4989733059548255 | 0.48767967145790553 |
| 1\_0\_1 | 0.47741273100616016 | 0.5338809034907598 | 0.4989733059548255 | 0.5082135523613963 |
| 1\_1\_2 | 0.55338809 | 0.5092402464065708 | 0.5112936344969199 | 0.5585215605749486 |
| 1\_2\_3 | 0.5687885010266941 | 0.5646817248459959 | 0.5308008213552361 | 0.5944558521560575 |

## Next Week

* Continue processing pupil data.
* Continue writing the paper and focusing on the literature review.
* Schedule another meeting with new members to introduce and review my work.