**Model:**我是使用LSTM來預測1979年的WIND，因為資料量多，我怕會梯度爆炸，所以選擇使用LSTM而不是使用RNN來當作Model，其中因為LSTM內部還有input，output，forget gate，但直接使用nn.LSTM就可以了，其中hidden的size設為1000。  
**Input Data:**

因為只要預測風速，所以去wind\_dataset.csv中先把WIND的資料用numpy讀出來之後，轉乘tensor，訓練之前把所有資料的0.7給訓練及0.3給驗證集，隨機取樣。 **Output Data:**

最後在測試集中做預測，結果為1979年的平均WIND之預測。 **1979的預測風速:**

|  |  |
| --- | --- |
| Day | Pred\_wind |
| 0 | 9.546578 |
| 1 | 8.352249 |
| 2 | 5.883732 |
| 3 | 6.78848 |
| 4 | 12.90349 |
| 5 | 8.02253 |
| 6 | 11.74242 |
| 7 | 12.57821 |
| 8 | 11.82885 |
| 9 | 11.61747 |
| 10 | 17.48623 |
| 11 | 13.94108 |
| 12 | 13.3286 |
| 13 | 12.41596 |
| 14 | 16.02928 |
| 15 | 13.96795 |
| 16 | 15.27994 |
| 17 | 12.25709 |
| 18 | 13.41493 |
| 19 | 10.07406 |
| 20 | 14.43148 |
| 21 | 15.79812 |
| 22 | 10.81507 |
| 23 | 13.94387 |
| 24 | 13.67189 |
| 25 | 8.384942 |
| 26 | 6.636951 |
| 27 | 5.911157 |
| 28 | 4.592 |
| 29 | 13.2068 |
| 30 | 14.0006 |
| 31 | 11.77162 |
| 32 | 11.29286 |
| 33 | 12.58132 |
| 34 | 13.93507 |
| 35 | 12.4358 |
| 36 | 14.41855 |
| 37 | 16.96641 |
| 38 | 8.370651 |
| 39 | 11.49687 |
| 40 | 11.82907 |
| 41 | 16.53897 |
| 42 | 17.20263 |
| 43 | 11.44997 |
| 44 | 12.50445 |
| 45 | 17.31433 |
| 46 | 16.8977 |
| 47 | 10.76921 |
| 48 | 11.36042 |
| 49 | 7.621713 |
| 50 | 4.500544 |
| 51 | 10.03059 |
| 52 | 13.36361 |
| 53 | 14.27464 |
| 54 | 13.29172 |
| 55 | 16.16097 |
| 56 | 16.68696 |
| 57 | 16.57797 |
| 58 | 11.94871 |
| 59 | 9.8283 |
| 60 | 8.990576 |
| 61 | 8.439935 |
| 62 | 7.63784 |
| 63 | 7.954799 |
| 64 | 9.0129 |
| 65 | 19.10521 |
| 66 | 9.807988 |
| 67 | 10.09975 |
| 68 | 4.714282 |
| 69 | 10.39941 |
| 70 | 8.232115 |
| 71 | 7.749478 |
| 72 | 6.06719 |
| 73 | 14.27124 |
| 74 | 9.602225 |
| 75 | 8.029016 |
| 76 | 6.537963 |
| 77 | 8.85743 |
| 78 | 7.607235 |
| 79 | 7.171371 |
| 80 | 6.793516 |
| 81 | 9.150086 |
| 82 | 5.068383 |
| 83 | 15.2525 |
| 84 | 9.804295 |
| 85 | 9.433329 |
| 86 | 10.8722 |
| 87 | 9.433093 |
| 88 | 11.46257 |
| 89 | 12.58091 |
| 90 | 14.33984 |
| 91 | 14.78276 |
| 92 | 9.882653 |
| 93 | 14.13009 |
| 94 | 14.98449 |
| 95 | 13.05639 |
| 96 | 16.3867 |
| 97 | 13.20328 |
| 98 | 13.12137 |
| 99 | 11.34107 |
| 100 | 12.23618 |
| 101 | 6.608553 |
| 102 | 8.065715 |
| 103 | 10.96615 |
| 104 | 11.33278 |
| 105 | 12.14157 |
| 106 | 11.86842 |
| 107 | 10.20617 |
| 108 | 6.966783 |
| 109 | 7.103308 |
| 110 | 5.314472 |
| 111 | 9.239071 |
| 112 | 8.366032 |
| 113 | 6.51474 |
| 114 | 6.818646 |
| 115 | 7.952591 |
| 116 | 6.791517 |
| 117 | 6.094905 |
| 118 | 6.3776 |
| 119 | 6.281395 |
| 120 | 3.993355 |
| 121 | 5.764158 |
| 122 | 4.893423 |
| 123 | 6.797472 |
| 124 | 8.348504 |
| 125 | 5.559052 |
| 126 | 12.22382 |
| 127 | 8.918296 |
| 128 | 7.031603 |
| 129 | 6.679868 |
| 130 | 9.948519 |
| 131 | 8.870489 |
| 132 | 8.189054 |
| 133 | 11.4051 |
| 134 | 8.737527 |
| 135 | 16.15889 |
| 136 | 11.31845 |
| 137 | 10.52163 |
| 138 | 13.16678 |
| 139 | 10.52113 |
| 140 | 10.56524 |
| 141 | 13.07027 |
| 142 | 12.76827 |
| 143 | 10.41533 |
| 144 | 8.232423 |
| 145 | 7.964965 |
| 146 | 9.5449 |
| 147 | 7.389164 |
| 148 | 7.466684 |
| 149 | 7.742495 |
| 150 | 7.984132 |
| 151 | 6.628552 |
| 152 | 4.835344 |
| 153 | 4.907153 |
| 154 | 5.057537 |
| 155 | 8.724501 |
| 156 | 6.222472 |
| 157 | 5.101017 |
| 158 | 6.620986 |
| 159 | 8.11187 |
| 160 | 6.582582 |
| 161 | 7.908348 |
| 162 | 8.34428 |
| 163 | 8.593633 |
| 164 | 11.16657 |
| 165 | 5.132257 |
| 166 | 8.712276 |
| 167 | 9.039104 |
| 168 | 14.78435 |
| 169 | 14.05443 |
| 170 | 10.79876 |
| 171 | 13.01349 |
| 172 | 11.15497 |
| 173 | 13.29825 |
| 174 | 17.08282 |
| 175 | 12.81254 |
| 176 | 12.23727 |
| 177 | 10.97995 |
| 178 | 11.18218 |
| 179 | 7.895369 |
| 180 | 8.399946 |
| 181 | 10.8589 |
| 182 | 13.38196 |
| 183 | 10.67824 |
| 184 | 9.347133 |
| 185 | 7.984434 |
| 186 | 6.478961 |
| 187 | 4.96221 |
| 188 | 6.374356 |
| 189 | 5.937967 |
| 190 | 8.05508 |
| 191 | 6.319703 |
| 192 | 5.883913 |
| 193 | 6.574087 |
| 194 | 8.026251 |
| 195 | 6.227835 |
| 196 | 3.766668 |
| 197 | 6.345686 |
| 198 | 10.89035 |
| 199 | 9.751407 |
| 200 | 8.211503 |
| 201 | 10.80589 |
| 202 | 9.411982 |
| 203 | 6.514629 |
| 204 | 5.730231 |
| 205 | 7.276335 |
| 206 | 9.25587 |
| 207 | 5.126235 |
| 208 | 4.682356 |
| 209 | 7.823005 |
| 210 | 10.25733 |
| 211 | 8.258701 |
| 212 | 5.545983 |
| 213 | 8.695082 |
| 214 | 7.860061 |
| 215 | 11.52253 |
| 216 | 9.056326 |
| 217 | 6.323366 |
| 218 | 9.929678 |
| 219 | 7.2149 |
| 220 | 10.70457 |
| 221 | 11.0084 |
| 222 | 13.4131 |
| 223 | 8.853467 |
| 224 | 6.567873 |
| 225 | 8.797185 |
| 226 | 9.334358 |
| 227 | 9.881783 |
| 228 | 9.83959 |
| 229 | 7.721216 |
| 230 | 9.768799 |
| 231 | 9.719618 |
| 232 | 11.43499 |
| 233 | 11.69575 |
| 234 | 12.90408 |
| 235 | 14.95217 |
| 236 | 11.95746 |
| 237 | 15.95098 |
| 238 | 11.17391 |
| 239 | 7.798059 |
| 240 | 7.930371 |
| 241 | 7.482983 |
| 242 | 6.800333 |
| 243 | 8.41377 |
| 244 | 6.329847 |
| 245 | 7.246463 |
| 246 | 7.167376 |
| 247 | 7.722651 |
| 248 | 6.085091 |
| 249 | 10.72067 |
| 250 | 7.515721 |
| 251 | 14.08879 |
| 252 | 8.595876 |
| 253 | 8.156808 |
| 254 | 7.628588 |
| 255 | 6.758883 |
| 256 | 7.657799 |
| 257 | 7.945555 |
| 258 | 10.2742 |
| 259 | 9.13759 |
| 260 | 7.101136 |
| 261 | 4.688317 |
| 262 | 6.235776 |
| 263 | 4.095536 |
| 264 | 7.828683 |
| 265 | 7.868639 |
| 266 | 5.670232 |
| 267 | 10.28571 |
| 268 | 9.526673 |
| 269 | 7.844043 |
| 270 | 9.911895 |
| 271 | 10.82072 |
| 272 | 12.29809 |
| 273 | 10.71591 |
| 274 | 7.386154 |
| 275 | 7.749324 |
| 276 | 10.35773 |
| 277 | 8.038019 |
| 278 | 6.931083 |
| 279 | 8.3702 |
| 280 | 8.229592 |
| 281 | 5.939081 |
| 282 | 6.124381 |
| 283 | 8.200734 |
| 284 | 5.790494 |
| 285 | 4.261146 |
| 286 | 6.534832 |
| 287 | 5.098743 |
| 288 | 5.630109 |
| 289 | 7.01774 |
| 290 | 10.1409 |
| 291 | 6.049653 |
| 292 | 5.116449 |
| 293 | 7.290457 |
| 294 | 5.669722 |
| 295 | 7.077857 |
| 296 | 8.121683 |
| 297 | 9.880347 |
| 298 | 9.179207 |
| 299 | 12.03118 |
| 300 | 11.70226 |
| 301 | 10.01754 |
| 302 | 15.01662 |
| 303 | 10.12886 |
| 304 | 9.813179 |
| 305 | 6.889767 |
| 306 | 7.550386 |
| 307 | 10.22929 |
| 308 | 14.23209 |
| 309 | 8.35226 |
| 310 | 5.491192 |
| 311 | 5.937042 |
| 312 | 11.32862 |
| 313 | 11.67209 |
| 314 | 11.46474 |
| 315 | 6.724768 |
| 316 | 7.793895 |
| 317 | 11.52595 |
| 318 | 8.59173 |
| 319 | 9.466285 |
| 320 | 13.44686 |
| 321 | 12.02139 |
| 322 | 9.456316 |
| 323 | 9.630819 |
| 324 | 8.322954 |
| 325 | 8.403064 |
| 326 | 11.2195 |
| 327 | 9.695591 |
| 328 | 5.614267 |
| 329 | 7.1965 |
| 330 | 6.244078 |
| 331 | 6.041224 |
| 332 | 7.950435 |
| 333 | 5.68033 |
| 334 | 8.67978 |
| 335 | 10.55484 |
| 336 | 8.701848 |
| 337 | 5.798718 |
| 338 | 9.023232 |
| 339 | 5.447115 |
| 340 | 11.76322 |
| 341 | 14.68751 |
| 342 | 13.32325 |
| 343 | 10.99584 |
| 344 | 13.053 |
| 345 | 14.17816 |
| 346 | 11.56964 |
| 347 | 15.20028 |
| 348 | 17.92576 |
| 349 | 11.76938 |
| 350 | 11.01148 |
| 351 | 13.01771 |
| 352 | 9.722067 |
| 353 | 13.96753 |
| 354 | 10.06151 |
| 355 | 7.349614 |
| 356 | 9.381886 |
| 357 | 6.343054 |
| 358 | 7.790791 |
| 359 | 10.94671 |
| 360 | 9.899755 |
| 361 | 7.767506 |
| 362 | 11.61715 |
| 363 | 17.47308 |
| 364 | 14.97077 |