

### **Week Starting 22<sup>nd</sup> August**

I met with Gabriel on Wednesday to talk about his current research, with the view of gaining insight into how he has gone about analysing gait. It turned out that his aim is to produce a 'gait signature', which is the penultimate stage of the system I was looking at writing, and was enthusiastic about cooperating to produce a complete system, based on an immune inspired anomaly detector.

He was also keen to hear my ideas of possible measurements that could be taken for such a signature, and asked if I could define what my algorithm would need in order to build communicating filters for the framework he is using. We agreed to meet again on Friday, where he demonstrated the software he is using, and we created the stub classes for the filters that needed to be built; SignatureGenerator and AnomalyDetector. We also talked over the attributes of gait that he'd asked me to write down, and how easily they would be to implement in hardware.

I'd originally aimed to start programming this week, but as it has happened, I can now focus on a narrower area. This will hopefully give me the opportunity to experiment with variations to the dendritic cell model, other models, and hybrid methods.

This week I've also read most of Peter Bentley's book Digital Biology, which introduces concepts like genetic algorithms, neural nets, swarms, ants, immune systems and cellular automata. It was interesting to find out about other areas of 'Digital Biology', but it is not very in-depth, with no mathematics or algorithms.

I'll now start writing the Anomaly Detector, alongside preparing for the meeting with Peter Bentley as discussed on the phone, and thinking about how any of this research can be applied to hardware.

Thanks for your time,  
Steven