# David Graham Fueggle

## PhD Doctor of Philosophy

### Title.

Improving patient mortality through enhanced prediction with vital signs data

### Thesis Outline.

We will use Artificial Intelligence techniques and in particular deep learning to predict deterioration of patients in Healthcare using data that is already routinely captured in the UK as part of the (National) Early Warning Score (NEWS). The aim is to provide significantly improved and accurate prediction of health deterioration compared with the existing NEWS procedures. This would allow earlier intervention with the potential of significantly improving clinical outcomes. The poor quality of the data available will present a particular challenge as will the development of all the processes required to create an end to end pipeline. We will also determine if other data, other than currently used, would further improve prediction capabilities. A significant effort for the Thesis will involve benchmarking of different types of algorithms including novel implementations, combinations of algorithms, and finding new ways for improvements and tuning of algorithms. Coupled with this will be the development of processes to visualize multi-modal time-series data, identify problems in data quality and create processes to compensate for irregularities including missing data, data taken at different time intervals and incorrect entries.

### Biography.

I am David Fueggle and I am choosing to undertake a PhD as a retired electronics/ computer systems engineer. The PhD would be for personal development and is a long awaited objective of mine. I have a first degree in electronics/ computer systems and spent my career implementing new and novel systems in this area. I also have MSc in intelligent systems and an MBA. My interest in machine learning comes from working on early successful business applications including free text search engines for the intelligence community and automatic fingerprint searching/matching for policing and identification. I am studying part time and spend some of my time living in Greece and hope to complete the thesis in four and a half years.

### Research Activities.

Understanding motion-based communication in single cell organisms - final year project 2018

**Profile Pic**

## David Graham Fueggle

## Contact Details.

David.Fueggle@research.sunderland.ac.uk

Faculty of Technology

## Director of Studies.

Professor Chris Bowerman

## Citations And Presentations.

Understanding motion-based communication in single cell organisms MSc Thesis -2018