CLAIMS:

1. A pressure sensing sheet system, including:

a pressure sensing mat, including:

a piezoresistive material;

an at least one conductor array row and an at least one conductor array column, wherein the piezoresistive material is sandwiched between the at least one conductor array row and the at least one conductor array column, wherein each intersection of the conductor array row and the conductor array column defines a taxel;

at least one sheet-edge row segment coupled to the at least one conductor array row;

at least one sheet-edge column segment coupled to the at least one conductor array column;

a sheet interface board connected to the at least one sheet-edge row segment and the at least one sheet-edge column segment, and configured to act as a fan-out; and

a databox connected to the sheet interface board of the pressure sensing mat via signal wires and configured to measure each taxel of the pressure sensing mat.

2. The pressure sensing sheet system of claim 1, wherein at least one of:

the databox measures each taxel by iterating across all conductor array rows and conductor array columns creating a circuit across each individual taxel; and

wherein the taxel measurement value is serialised, allowing for an at least 10 lead connection to the sheet interface board.

3. The pressure sensing sheet system of claim 1 or claim 2, wherein at least one of:

the at least one sheet-edge row segment can drive a minimum of three and a maximum of eight conductor array rows; and

the at least one sheet-edge column segment can drive a minimum of three and a maximum of eight conductor array columns.

4. The pressure sensing sheet system of anyone of claims 1 to 3, wherein both the at least one sheet-edge row segment and the at least one sheet-edge column segment are

designed to chain unidirectionally with additional sheet-edge row segments or sheet-edge column segments, respectively.

5. The pressure sensing sheet system of anyone of claims 1 to 4, wherein the databox is configured to communicate with an external server to transmit measurements for processing.

6. The pressure sensing sheet system of anyone of claims 1 to 5, wherein at least one of:

the databox can dynamically determine the size of the conductor array; and

the databox is configured to fault check the conductor array.

7. The pressure sensing sheet system of anyone of claims 1 to 6, wherein the databox and the sheet interface board are configured to measure multiple taxels at once to increase bandwidth.

8. The pressure sensing sheet system of anyone of claims 1 to 7, wherein the at least one sheet-edge row segment and the at least one sheet-edge column segment are configured to allow the databox to at least one of:

measure absolute resistance at each taxel of the conductor array; and

measure relative potential difference across each taxel of the conductor array.

9. The pressure sensing sheet system of anyone of claims 1 to 8, wherein the databox is further configured to at least one of:

display information representative of the pressure sensing sheet system; and

output a display signal for the purpose of displaying information representative of to the pressure sensing sheet system.

10. A method for determining pressure across a plurality of conductive rows and a plurality of conductive columns of a conductive fabric, the method comprising:

applying a first voltage supply to each row of the plurality of rows and each column of the plurality of columns of the conductive fabric;

selecting a first of the plurality of rows and a first of the plurality of columns of the conductive fabric, wherein the selected row is provided a second voltage supply greater than the first voltage supply;

measuring an output of the selected column, the output comprising an electrical signal;

iterating the selected column from the first to a last of the plurality of columns, wherein for each iteration of the plurality of columns the measuring of the output of the selected column is repeated;

iterating the selected row from the first to a last of the plurality of rows, wherein for each iteration of the plurality of rows the iteration of the columns is repeated; and

determining pressures applied to the conductive fabric based on the measured outputs.

11. The method of claim 10, further comprising using the determined pressures applied to the conductive fabric to generate at least one heat map.

12. The method of claim 11, further comprising determining using a machine learning method, based on the at least one heat map, if the patient is at risk of developing a pressure injury and/or if the patient is at risk of falling out of the bed.

13. The method of any one of claims 10 to 12, further including, prior to applying the first voltage supply, a method for determining the number of conductive rows in the plurality of conductive rows, the method comprising:

applying an electrical pulse to a first row shift register of a plurality of row shift registers for a single clock cycle, wherein each bit of the plurality of row shift registers is indicative of one of the plurality of conductive rows and the plurality of row shift registers are connected in series;

applying a plurality of row clock cycle signals to the plurality of row shift registers, wherein for every row clock cycle signal applied the electrical pulse shifts one bit in the plurality of row shift registers;

receiving from a last row shift register of the plurality of row shift registers the electrical pulse; and

determining the number of conductive rows in the plurality of rows based on the number of row clock cycle signals applied.

14. The method of any one of claims 10 to 13, further including, prior to applying the first voltage supply, a method for determining the number of conductive columns in the plurality of conductive columns, the method comprising:

applying an electrical pulse to a first column shift register of a plurality of column shift registers for a single clock cycle, wherein each bit of the plurality of column shift registers is indicative of one of the plurality of conductive columns and the plurality of column shift registers are connected in series;

applying a plurality of column clock cycle signals to the plurality of column shift registers, wherein for every column clock cycle signal applied the electrical pulse shifts one bit in the plurality of column shift registers;

receiving from a last column shift register of the plurality of column shift registers the electrical pulse; and

determining the number of conductive columns in the plurality of columns based on the number of column clock cycle signals applied.

15. The method of any one of claims 13 and 14, further including a method for fault checking by determining if a fault is present based on the electrical pulse, wherein not receiving the electrical pulse after the determined number of clock cycle signals has been applied is indicative of a fault.