Soundar Kumara: Brief Bio

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Soundar Kumara is the Allen, E., and Allen, M., Pearce Professor of Industrial and Manufacturing Engineering at Penn State. Has an affiliate appointment with the school of Information Sciences and Technology. He is a faculty associate with the Institute of Cyber & Data Science Institute at Penn State. His research interests are in Sensor based Manufacturing Process Monitoring, Data Science, Graph Analytics and Large-Scale Complex Networks, and AI and ML with applications in Manufacturing and Healthcare,

He obtained his Bachelor of Mechanical Engineering Degree from SVUCE Tirupati, M.Tech., from IIT Madras and Ph.D., in Industrial Engineering from Purdue University, USA. He held visiting appointments with Univ. of Tokyo, Korea Institute of Science and Technology, City Univ. of Hong Kong, Tsinghua University, China and MIT, USA.

He is a Fellow of Institute of Industrial and Systems Engineering (IISE), International Academy of Production Engineering (CIRP), American Association for Advancement of Science (AAAS), and American Association of Mechanical Engineers (ASME).

Kumara has worked on projects funded by NSF, DARPA, ARO, and Several Industries totaling about $ 45 Million over his career as a PI or Co-PI. He has also conducted applied modeling and implementations through research projects including for companies such as GM, GE, Ford-New Holland, CNH and DaiNippon Screen (Kyoto). In recent times his work with Geisinger Health Systems has resulted in implementations which help intervention on high risk patients after surgical discharge.

61 Ph.D., and 74 MS students graduated under his guidance. He has pioneered nonlinear real-time sensor data analysis techniques for manufacturing process monitoring and diagnosis and large-scale sensor networks. In the past five years he has been working with healthcare data analytics. He is among the first people to work in AI in manufacturing from the IE discipline. He teaches Undergrad and Grad level courses in AI and Data Analytics in Manufacturing.

Professor Kumara has about 300 publications to his credit. Many of his papers have won best paper awards; and many of his students have won best thesis awards from the Institute of Industrial Engineers; Dr. Kumara is the recipient of several awards including the David F. Baker Distinguished Research Award from the Institute of Industrial and Systems Engineering (IISE), and the Faculty Scholar medal, the highest research honor from Penn State. His students work with universities and industries such as IBM, GM, Google, Yahoo, CISCO and Amazon. He has about 12600 google citations (h-index: 46) and his Erdos number is 3. One of his papers in Physical Reviews-E is designated as a milestone paper for 2007 (25 papers were selected, one for each year published in PRE from 1993 till 2018 from among 50,000 publications). This work, resulted in the LPA based Clustering in Large Networks which is a part of all software packages (R, python, i-Graph, and Java).

Currently he serves as a department editor in Smart and Cyber Manufacturing Systems for IISE Transactions Focused Issue on Manufacturing, and as an associate editor for ASTM Journal of Smart and Sustainable Manufacturing Systems. In addition, he is on the editorial board of several journals. He is on the governing board of IISE BoK.

Some recent news links:

https://news.psu.edu/story/530596/2018/08/10/academics/researchers-paper-complex-networks-honored-milestone-contribution

https://www.ime.psu.edu/news/2019/kumara-soundar-congressional-caucus-address.aspx

http://www.worldpharmanews.com/research/4977-ai-could-offer-warnings-about-serious-side-effects-of-drug-drug-interactions

https://www.iise.org/ISEMagazine/details.aspx?id=47177

https://news.psu.edu/story/621285/2020/05/26/research/industrial-engineering-department-pivots-address-covid-19

https://www.securingindustry.com/pharmaceuticals/algorithm-can-detect-illicit-online-pharmacies-/s40/a12331/#.X3Dc02hKiUm