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Subir Biswas, Ph.D.

Founding director of the Networked Embedded and Wireless Systems (*NeEWS*) Laboratory (http://neews.egr.msu.edu) in Electrical and Computer Engineering, Michigan State University

Objective: To seek innovation opportunities in the intersection of Connected Systems and Artificial Intelligence

Summary: I am a technologist and innovator with 20 years of experience in the areas of embedded systems, communication networks, machine learning, Internet of Things (IoTs), and sensor systems. I have a long track record of research, system building, product inception, fund raising, and team building for taking incepted ideas to working systems. I have a unique mix of professional experience that includes corporate research and development, product development, and academic research. I am on the constant lookout for opportunities related to technology inception and productization in startup and academic settings.

Google Scholar Page: https://scholar.google.com/citations?user=NjUiHAMAAAAJ&hl=en

Key Achievements:

- Incepted and developed a software product: Tellium's Optical Mesh Protocol Modeling Tool StarNet Modeler ©
- Incepted and developed a wearable sensor product for NASA for astronaut group interaction monitoring
- A startup was formed in 2017 based on licensing of one of my recent patents on *AI Based Smart Hydration System*.
- Raised over $10 Million funding from agencies including Michigan Initiative for Innovation and Entrepreneurship (MIIE), National Science Foundation (NSF), National Institutes of Health (NIH), Air Force Research Laboratory (AFRL), National Aeronautics and Space Administration (NASA), US Department of Agriculture (USDA), and Michigan Department of Transportation
- Established a Center for Cyber-enabled Cognitive Structures using an NSF $1M grant and a $400,00 MSU Strategic Partnership grant
- Invented 12 U.S. and international patents (granted and pending)
- Published 275+ peer-reviewed research publications and many best paper awards

Technical Skills: Wireless and Communication Network Protocols, Machine Learning and Data Analytics, Data Visualization, Embedded Software and System Integration, System Engineering, Large Scale Simulation Software, Linux, TinyOS, Android, Device Drivers, Google Firebase, High Performance Computing, Amazon Web Services, IBM Cloud Services for Speech Sentiment Analysis, C/C++, Matlab, and R

Management Skills: Leading research and development groups, product inception, system engineering, product development, fund raising, customer interaction, technical marketing, and business development presentations, extensive technical and funding proposal writing

Currently Managed Funded Projects: Content Delivery and Caching in Connected Vehicles, AI System for Human Emotion Detection, Novel Hardware and Software Systems for Wearable Sensing in Health Applications; Deep Learning based Network Traffic Analysis; Distributed Network Cognition using Spiking Neural Networks; Protocols and Systems for Sensors and Internet of Things (IoTs).

Professional Experience:

Professor, ECE, Michigan State University, MI, USA 2003 – Present

- Established a Center for Cyber-enabled Cognitive Structures using an NSF $1M CISE grant and a $400,00 MSU Strategic Partnership Grant from Michigan State University
- Developed a Wearable Social Sensing Product that is used at NASA's Human Exploration Research Analog (HERA) at Johnson Space Center, Houston TX. This was developed with a $3 Million grant from NASA
- Awarded twelve (granted and pending) U.S. patents; An MSU startup was formed using one of the recent patents
- Graduated 15 Ph.D. and 7 M.S. students
- Publication of 275+ peer-reviewed journal/conference papers
  http://neews.egr.msu.edu/Pub.htm

Principal Architect, Tellium Inc., Startup, Oceanport, New Jersey, USA 2000 – 2003

- Designed, system engineered, and managed the development of a revenue-generating software product: *Tellium's Optical Mesh Protocol Modeling Tool StarNet Modeler*©
- Raised $480,000 Venture Capital R&D funding for this development
- Developed an IP-Centric Control Plane Architecture for Optical Networks

Research Staff Member, NEC USA C&C Research Lab., Princeton, New Jersey, USA 1996 – 2000

- Led the design and development of a Distributed ATM Switch Control architecture for a multiprocessor ATM switch Delta-X, which was an edge network access product developed by NEC's spin-off startup Eulix Networks
- Designed, developed, and standardized the first Wireless ATM network protocol architecture including Mobility Signaling, Location Management, Data-link Control, and MAC layer protocols

Network Software Engineer, AT&T/Olivetti Research Labs, Cambridge, Cambridge, U.K. 1992 - 1994

- Designed and developed an ATM device driver for AT&T/Olivetti ATM switches. The driver was developed for an embedded micro-kernel WANDA, running on ARM-60 switch control processors.
- Designed and development a Programmable Architecture for Real-time Operating System (PARO), which is a nano-kernel based experimental test-bed for QoS-aware real-time task scheduling. PARO was one of the very early kernels that adopted a tool-kit approach for task scheduling based on kernel-level scheduling APIs. PARO was subsequently used in AT&T/Olivetti production switches.

Education:

Ph.D.	Computer Engineering	University of Cambridge, Cambridge, UK.	August 1996
M.S.	Electrical Engineering	Jadavpur University, Calcutta, India	April 1989
B.S.	Electrical Engineering	Jadavpur University, Calcutta, India	June 1987