#### DR SHOUMEN PALIT AUSTIN DATTA

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### **EXCEPTIONAL CHARACTERISTICS**

- Excellence in communication, digital science and key dimensions (autonomous vehicles, robotics, 3D printing, healthcare)
- Creator of digital concepts and progress of industrial internet of things (IoT for manufacturing, healthcare, energy, retail)
- Provides thought leadership for digital transformation (convergence of AI, Data Analytics, Digital Twins, Cybersecurity)
- Skilled in executive education for strategy, digital operations and innovation in supply chain management for C-suite
- Trusted strategic advisor to global organizations for digital transformation futures and intelligent decision systems

## MANAGEMENT AND ORGANIZATIONAL EXPERIENCE

- MIT Auto ID Center, Technology Board (2000-2004)
- MIT Forum for Supply Chain Innovation (2001-2009)
- MIT Data Center (2003-2006)
- MIT Sloan School of Management, Executive Education in Strategy and Management and other programs (2002-2007)
- Medical Device Interoperability Program (MDPnP Lab), Massachusetts General Hospital, Harvard Medical School
- Industry

#### **POSITIONS**

#### INDUSTRY ● ACADEMIA ● GOVERNMENTS ● GLOBAL ORGANIZATIONS

2013 - present2017 - present2017 - present

MIT Auto ID Labs • Research Affiliate, Dept of Mechanical Engineering, MIT <a href="http://autoid.mit.edu/people-2">http://autoid.mit.edu/people-2</a> MDPnP Scientist • <a href="http://mdpnp.mgh.harvard.edu">http://mdpnp.mgh.harvard.edu</a> • Massachusetts General Hospital, Harvard Medical School NSF Center on Robots and Sensors at Purdue • <a href="http://web.ics.purdue.edu/~rvoyles/RoSeHUB.contact.html">http://web.ics.purdue.edu/~rvoyles/RoSeHUB.contact.html</a>

- Founded in 1999, the Auto ID Center at MIT re-invented RFID, created EPC standard and gave birth to IoT.
- I was a part of the Auto ID Center at MIT from 1999-2004. All major corporations from multiple industries were members of the Auto ID effort to implement RFID for tracking and tracing (EPC and PML as standards). Published vision of evolution of IoT to industrial IoT (2003) including Agents, AI, predictive analytics of data.
- I am continuing the data and connectivity momentum to advance Digital Transformation and industrial IoT through R&D in manufacturing, software, energy, security, healthcare (<a href="http://mdpnp.mgh.harvard.edu">http://mdpnp.mgh.harvard.edu</a>). Convergence of sensing, connectivity with data, decision, analytics, is key to action, outcome and profit.

2013-2016 2013-2016 Senior VP, Industrial Internet Consortium (<u>www.iiconsortium.org</u>) (10/2013-7/2016) ● <u>http://bit.ly/MIT-IOT</u> Senior VP, Object Management Group (<u>www.omg.org</u>) (10/2013-8/2016) ● <u>http://bit.ly/IIC-2013-2016-SD</u>

• 300 companies, 25 countries, 3300 members, in pursuit of digital transformation and industrial IoT (IIoT)

2000-2010

Research Scientist, Engineering Systems Division, Massachusetts Institute of Technology MIT Auto ID Center (Technology Board Member for Standardization of RFID) MIT Forum for Supply Chain Innovation (Co-Founder, Executive Director, Research Director) MIT Sloan School of Management (Executive Education in Strategy and Management, Supply Chain) MIT Data Center (2003-2006) - <a href="http://web.mit.edu/edmund\_w/www/DATACENTERpeople.htm">http://web.mit.edu/edmund\_w/www/DATACENTERpeople.htm</a> MIT Energy Initiative (2008-2009) - <a href="http://energy.mit.edu/">http://energy.mit.edu/</a>

- I helped to lead change and growth in business and technology through global innovation due to radio frequency identification (RFID) of objects and internet of things (IoT) as a result of the ecosystem created by RFID and its integration with software and ERP for real-time data and analytics coupled with AI.
- I developed models of operational transparency which could generate new business models and created tools (published ground breaking ideas and also collaborated with Nobel Prize winning economists).
- I acted in advisory capacity to Fortune 500 companies, various US government agencies, organizations, foreign governments and global academic institutions to articulate, communicate and educate strategic nodes and points of influence with respect to [a] new tools to create new dimensions of socio-economic growth, [b] technologies that may benefit from tech transfer systems, [c] creation of intellectual property (IP) due to advances that may stem from some of these fundamental proceedings, [d] integration of this wealth of knowledge with community college and secondary education (necessary to maintain the supply chain of talent to continue to reap the harvest from future innovation).

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Experienced leader with track record of business innovation and catalyzing profitable growth through product strategy and management of technology • Demonstrated expertise in steering organizational change through strategy, management and leadership of multi-national teams across diverse cultures • Experience in public sector and significant bio-medical expertise. 

Sales and Revenue Growth 
Channel Management 
Product Development 
Commercialization 
Innovation Index 
Strategic Planning 
Change Management 
Market Assessment 
Bio-medical Research 
Partnership Development

# High Tech Business Unit - SAP Labs Palo Alto, California

Revenue Growth estimated at \$1 million +

- [a] Development consultant for high tech IBU
- [b] Pre-sales support for semiconductor industry (highest growth vertical which included CRM, DRM, PLM, MES)
- [c] Global management of liaison with SAP Japan

## High Tech Accounts - SAP Japan (Tokyo, Japan)

- [a] Major customers SONY, HITACHI and MITSUBISHI
- [b] Specifically served as the SAP SCM (APO suite) pre-sales support team for SONY Semiconductors, SONY Electronics, SONY Global Logistics, SONY Computer Entertainment
- [c] Defined SAP-SONY APO needs for sales strategy
- [d] Major sales growth for SAP Japan
- [e] Consulting for SAP Labs Palo Alto

## SCM Business Unit – SAP AG (Waldorf, Germany)

- Servi Business office State Ale (Malaett) Germany)
- [a] Introduced RFID innovation for SAP real-time SCM [b] RFID SCM partnership with P&G and SONY (Japan)
- [c] Co-created business plan for SAP SCM RFID integration
- [d] Helped SAP adoption of RFID in multiple suites
- [e] Represented SAP at RFID Technology Board at MIT
- [f] Helped SAP to publish 2 books on RFID applications Adapt or Die and RFID and Beyond (Claus Heinrich)

### 1999-2004 MIT Auto ID Center

- $\ensuremath{\square}$  RFID Vision Real-Time Intelligent Data, IoT
- ☑ Strategic and Business Applications of RFID
- ☑ RFID as a Real-Time Data Tool for Supply Chain
- ☑ RFID next generation applications and evolution
- ☑ RFID SCM consulting: Wal-Mart, US DoD, P&G, Kimberly-Clark, Tesco, UniLever, Gillette, Deloitte, Accenture, PWC, Hitachi, Philips, GlaxoSmithKline, Government of Taiwan

MIT Forum

2001-2010
MIT Forum for Supply Chain Innovation

Revenue Growth estimated at \$1 million +

# Co-Founder, Executive Director and Research Director

COMPANIES – CONSULTING			
GE	Volvo (SW)	Nokia (FI)	
GM	Tata (IN)	Chi-Mei (TW)	
P&G	Siam Cement	LogicaCMG (NL)	
IBM	Michelin (FR)	LogicTools	
CGEY	Hitachi (US)	CapGemini (UK)	
Pepsi	III (TW)	Rolls Royce (UK)	
Xerox	ITRI (TW)	SAP (DE, US, JP)	
Intel	Airbus (DE)	Sony (JP)	
Deloitte	AAR	Mitsubishi (JP)	
ExoStar	Kone (FI)	Stockway (FI)	

GOVERNMENTS AND GLOBAL ORGANIZATIONS – CONSULTING
US Department of Defense (US Army Materiel Command)
US Department of Homeland Security (CBP, TSA)
World Customs Organization (Brussels)
United Nations - UNDP (New York, Shanghai)
Government of Finland (TEKES - Council on Sci and Tech)
Government of Taiwan (Ministry of Economic Affairs IDB)
Government of Thailand (Ministry of Science and Tech)
Government of Ireland (Innovation, Office of Taoiseach)
Government of India (Customs, Finance, Energy)
GS1 HongKong (China), TEPCO (Japan), NSF (USA)

Revenue Growth estimated at \$10 million +

Revenue Growth estimated a \$100 million +

# Advisory / Consulting Roles – Disclosure of topics, statement of work and agreements are prohibited (to comply with NDA)

Koch	Digital Transformation • IoT and Industrial IoT Data, AI, Analytics • Sensors, robotics, nanotech	
GE	Industrial IoT • RFID, UWB, Sensors • Predictive Analytics • Digital Supply Chain Management • IPv6	
P&G	Transparency of SCM • Design of Data Flow • RFID in Supply Demand Network • Agents in SCM	
IBM	Digital Value Networks	
PepsiCo	Supply Chain Management (SCM)	
Xerox	Intelligent PLM (product life cycle management)	
Intel	RFID and digital SCM in retail stores of the future • Autonomous Transportation • Industrial IoT	
Volvo	Intelligent Decision Systems	
Tata (Tata Steel)	Supply Chain Planning and Optimization	
Siam Cement	Supply Chain Planning and Optimization  Supply Chain Planning and Optimization • Energy Efficiency • Sensor Networks • Asset Management	
Michelin	Inventory Optimization • Operations Management • RFID in Asset Management	
Hitachi	RFID in track and trace • IoT and the industrial internet • Digital Transformation • Transportation	
Airbus		
	RFID in track and trace • Spare parts inventory management	
General Motors	RFID in track and trace • Spare parts inventory management	
AAR	RFID in track and trace • SCM inventory management • Digital Transformation • Data, Analytics, Al	
Kone	Intelligent PLM (product life cycle management) and coupling with digital supply chain management	
Nokia	Intelligent PLM (product life cycle management) and coupling with digital supply chain management	
Chi-Mei	Digital interfaces in healthcare infrastructure	
LogicaCMG	SCM and the evolution of value networks	
CapGemini	RFID and digital supply chain • IoT	
Sony	RFID in semiconductor industry transparency • Global Logistics • SCM software • Decision Systems	
Mitsubishi	RFID in heavy industry	
TEPCO	Internet infrastructure • IPv6 • Semantic Interoperability between systems • Intelligent Systems	
Huawei	IoT and Industrial IoT • Digital Transformation • Data, Analytics, AI and Intelligent Decision Systems	
TCS	Data and Artificial Intelligence • Digital Transformation • Robotics and Automation	
Fujitsu	IoT and Industrial Internet • Data, Analytics and AI	
TechMahindra	IoT and Industrial Internet • Data, Analytics, AI • Medical Devices • Interoperability • Cybersecurity	
Accenture	IoT and Industrial Internet • Data, Analytics and AI • Digital Twins and Digital Transformation of SCM	
Deloitte	Healthcare Information Technology (HIT)	
Braun	Medical Devices • Interoperability • Cybersecurity	
Infosys	IoT and Industrial Internet • Data, Analytics, AI • Autonomous Transportation	
Governments		
AOK (DE)	Digital Transformation in Healthcare • Cybersecurity • Data, Analytics, AI	
WCO (EU)	Security and Cybersecurity in multi-modal transportation • Standards for security harmonization	
DHS (US)	Risk in security • ACE Program	
ITRI (TW)	IoT and Industrial Internet • SCM • Sensors and energy efficiency	
III (TW)	RFID, IoT, IIoT • Digital SCM • Data, Analytics, AI • Cybersecurity • FinTech • Blockchain • Transport	
MOEA (TW)	IoT and Industrial Internet • Digital SCM • Data, Analytics, AI • Education Technology	
STAG (TW)	RFID and Digital SCM	
TEKES (FI)	Ministry of Science and Technology (Innovation, SCM, PLM, Data, Analytics, IoT, Cybersecurity)	
Ireland	Prime Minister's Task Force for Innovation (Energy)	
India	Customs Bureau, Ministry of Finance	
DoD (US)	US Army Materiel Command	
GAO, NAS (US)	Cybersecurity • IoT and Industrial IoT	
DoC (US)	Workforce and Education for Economic Growth (National Task Force for Clinton Administration)	
State of California	Special Assistant to Mayor of San Francisco for Public K-12 Education (SFUSD) http://bit.ly/SD-K12	
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IoT, RFID and	Digital Twins and/or	Data, Analytics,	Digital Supply	Intelligent	Cybersecurity
Future IoT /	Digital	Al Software	Chain Operations	Product Lifecycle	
Industrial IoT	Transformation	Tools	Management	Management	
			(SCM)	(PLM)	
Koch	Koch	Koch			Koch
GE	GE	GE	GE		
P&G		P&G	P&G		
			PepsiCo		
				Xerox	
Intel	Intel	Intel	Intel		
Volvo			Volvo	Volvo	
Tata Steel			Tata Steel (TISCO)		
Siam Cement			Siam Cement	Siam Cement	
Michelin			Michelin	Michelin	
Hitachi			Hitachi	Hitachi	
Airbus			Airbus	Airbus	
AAR	AAR	AAR	AAR	AAR	
GM			GM		
			LogicaCMG		
CapGemini			CapGemini		
Sony			Sony	Sony	
Mitsubishi					
Huawei	Huawei	Huawei	Huawei		
Fujitsu	Fujitsu	Fujitsu			
TCS (Tata)	TCS (Tata)	TCS (Tata)	TCS (Tata)		
TechMahindra	TechMahindra				
Accenture	Accenture	Accenture	Accenture		
					B Braun
Infosys	Infosys	Infosys			1.04
					AOK
					WCO
ITDI	ITDI		ITDI		DHS
ITRI	ITRI		ITRI		1
III		III	III		III
MOEA	MOEA	MOEA	MOEA		
STAG	TEVEC	TEVEC	STAG	TEVEC	TEVEC
TEKES	TEKES	TEKES	TEKES	TEKES	TEKES
GAO					GAO
NAS					NAS

## List of Attributes / Characteristics / Soft Skills

- [00] Highly skilled communicator in almost any setting or environment
- [01] Trusted global advisor who had a role in creating the global digital tsunami
- [02] Broad spectrum understanding of technology, industry, confluence of ideas including current and emerging digital dimensions where trans-disciplinary cross-pollination is key to value proposition
- [03] Experience in consulting (globally) with different verticals and industries, about the systems approach to digital transformation with an end-to-end view of product, services and profitability
- [04] Helped to build strategic alliances and interdisciplinary teams for corporations
- [05] Engagement with executives of Fortune 500 companies, government agencies, bureaucrats and technocrats, worldwide
- [06] Exceptional interpersonal skills and excellence in verbal, written and presentation skills, adapted for level of interaction
- [07] Dynamic, innovative creator of digital ideas and themes for the pragmatic, the present and the future
- [08] Passion to inspire teams, customers and even nay-sayers to reach beyond their grasp and/or think differently
- [09] Convergence of ideas, tools and technologies necessary for synthesis of industry agnostic and industry specific solutions
- [10] Ability to connect 'dots' in the context of solutions, applications and strategy for digital enterprises now and the future
- [11] Understanding of where and what pockets of expertise reside, how to liaise with them, to help customers solve their problems in a systemic approach
- [12] Academic network and strategy driven by content knowledge and thought leaders of exceptional vision and calibre
- [13] Relationships with academia, industry, governments as well as multi-cultural understanding in emerging economies (SE Asia) and other geographies, in addition to the US and EU
- [14] Expertise in understanding a wide range of problem areas, solution spaces and the ability to communicate across a broad spectrum (scientists and engineers to executives and new entrants) as a thought leader, a digital advisor and digital evangelist
- [15] Proficiency in understanding the digital landscape, role in creating the paths for digital progress and passion about intelligent decision systems as a fundamental layer in industry in any dimension (natural resources, oil & gas, manufacturing, retail, healthcare, finance).
- [16] Serve as an "explainer" in addition to role as a digital advisor, to bridge the gap between technologists and business leaders, for emerging business areas, such as, digital transformation, AI, cognitive modeling and the rational Agent approach to create sustainable ecosystems
- [17] Enable and catalyze use of global institutions as platforms to promote thought leadership, market solutions and engage with new clients, propose new ideas or develop new opportunities for penetrating or creating new markets
- [18] Communication in public events through institutions as business development and marketing platforms for innovation
- [19] Relationship building qualities [a] ability to relate to almost all walks of life, [b] affable, [c] respectful of cultures, norms, traditions, age, place, roles [d] capable of conversation on a variety of topics (agriculture, art)
- [20] Dedication to purpose, uncompromising personal character and a deep sense of dignity.

## **EDUCATION**

1989	PhD ●	RUTGERS UNIVERSITY School of Medicine [Molecular Biology, Biochem, Genetics, Microbiology] • UMDNJ
1985	MS [eq	] ● Molecular Biology, Cell Biology, Virology, Molecular Genetics ● University of Pittsburgh (PA, USA)
1980	BSc [Ho	onours] ● Medical Physiology & Biochemistry; [Minors] Physics & Chemistry ● Presidency College, India
TRAI	VING	
1989	-1991	Harvard University, Harvard Medical School, Massachusetts General Hospital (Fellow in Medicine)
1991	-1994	Massachusetts Institute of Technology, Whitehead Institute (Human Genome Project)
1994	-1995	University of California San Francisco School of Medicine and UCSF School of Pharmacy
1995		University of California, Berkeley. Communications Network [Audit] ● Electrical Engineering / EECS
1998		Pharm D (award) University of California San Francisco School of Medicine ● UCSF School of Pharmacy

#### EXCELLENCE IN COMMUNICATION and PRESENTATION ● INNOVATION and THOUGHT LEADERSHIP in DIGITAL TRANSFORMATION

2005-2006 Advisor to the Secretary General, World Customs Organization, Brussels (Belgium)

2006 - present Innovation in SCM, Institut Supérieur de Logistique Industrielle, Bordeaux Ecole de Management KEDGE Business School

2006 Keynote Speaker, Chalmers University Executive Education Program, Gothenberg, Sweden

2006 Invited Speaker, Innovation in Logistics, Ministry of Transport and Communication, Helsinki, Finland

2006 Co-organizer, WCO Education Series in Globalisation and Interoperability, Brussels, Belgium 2006-2011 Advisor, Technical Strategy and Innovation, Decision Systems Lab, GE Global Research, NY

2006 Invited Speaker, 6<sup>th</sup> Agribusiness Summit, Lexington (Kentucky, USA)

2006 Advisor, State Board, California Department of Agriculture (Advisory Committee)
2006 Keynote Speaker, World Customs Organization IT Conference, Bangalore, India

2006 Invited Speaker, IIIS-Intel Conference, Trinity College Dublin, Ireland

2006-2007 Invited Visiting Professor, Dept of Technology Management & Economics, Chalmers University, Goteborg, Sweden

2006-2007 Co-Investigator, SMART Project (Funded by European Commission, EU), Trinity College Dublin, Ireland

2007 Advising, Pervasive Decisioning Systems Laboratory, GE Global Research, New York

2007 Invited Speaker & Visiting Faculty, Lappeenranta University of Technology (Kouvola Research Unit), Finland

2007 Seminar, US Department of Homeland Security, Washington DC 2008 Invited Speaker, DRIVE for Growth Conference (IDA, Ireland)

2008-2009 Research Advising and Entrepreneurship, Institute of Technology, Tralee and Kerry Technology Park
2008-2009 Co-Founder, Centre for Innovation in Distributed Systems (CIDS) at ITT (www.cids.ie → www.imar.ie)
2008 Visiting Lecturer in International Business, School of Business Studies, Trinity College Dublin, Ireland
2008 Co-Founder and Start-up Advisor, DCS ENERGY SAVINGS PVT LIMITED (www.dcsenergysavings.com)

2009 Invited Speaker, SCM Forum IX, Helsinki (Finland)
 2009-2010 Member and Affiliate, MIT Energy Initiative
 2009 Start-up Advisor, InGRID ENERGY LLC (Palos Park, IL)

2009 Visiting Lecturer, National Cheng Kung University and National University of Tainan (Taiwan, ROC)

2011 Invited Seminar, Dept of Technology Management & Economics, Chalmers University of Technology, Goteborg, Sweden
2013 Keynote ● Institut Supérieur de Logistique Industrielle, École Supérieure de Commerce de Bordeaux www. kedgebs.com
2014 Keynote ● MOOC & Digital Education - Presidents' Forum of Southeast, South Asian and Taiwan Universities (Taiwan)
2014-2015 The Industrial Internet of Smart Things – Institute for Information Industry, Taipei (Taiwan) <a href="https://web.iii.org.tw/">http://web.iii.org.tw/</a>

2014 Invited Speaker and Panelist at the CSC Aspire Conferencce on IoT

2014 Invited Seminar Speaker on Cyberphysical Systems at ISIS, Vanderbilt University

2014 Invited Keynote Speaker, IoT Forum at MIT (<u>www.iot-conference.org/iot2014/keynote-speakers/</u>)

2014 EU-US Summit Speaker at the IoT Forum at MIT (BILAT USA 2014)

2014 Organizer ● IIC Forum – A Sense of the Future (Austin, Texas) <u>www.iiconsortium.org</u>

2015 Invited Keynote – Planning the Future Together – <u>25<sup>th</sup> Forum</u> at Institut Supérieur de Logistique Industrielle, KEDGE BS

2015 Invited Speaker - Future Strategies Workshop at Huawei Corporation
 2015 Invited Speaker - Future Strategies Workshop at Mitsubishi Corporation

2015 Invited Panelist – STEM Education sponsored by the National Robotics Initiative at The White House (OSTP)
2015 Invited Keynote ● NITRD Ontology Summit at NSF ● http://ontolog.cim3.net/OntologySummit/2015/schedule.html

2015 Invited Keynote ● EU IoT Week in Lisbon, Portugal ● <a href="http://iot-week.eu/events/iot-week-lisbon/">http://iot-week.eu/events/iot-week-lisbon/</a>

2015 Invited Keynote ● CEA LETI in Grenoble, France ● <a href="http://bit.ly/GRENOBLE-24JUNE2015">http://bit.ly/GRENOBLE-24JUNE2015</a>
2015 Invited Keynote ● Tokyo University of Science, Tokyo, Japan ● <a href="http://bit.ly/TUS-IOT-DATTA">http://bit.ly/TUS-IOT-DATTA</a>

2015 Invited Keynote ● Global Forum, Oulu, Finland ● https://www.youtube.com/watch?v=1A2xTluGPjM

2015 Invited Keynote ● Tampere University of Technology ● <u>www.openlivinglabs.eu/event/global-forum-shaping-future-2015</u>

2015 Invited Keynote ● TEKES (Helsinki, Finland) ● <a href="https://tapahtumat.tekes.fi/event/internationalcollaboration">https://tapahtumat.tekes.fi/event/internationalcollaboration</a>

2015 International Telecommunication Union <u>Forum on IoT</u> ● <u>http://bit.ly/ITU-GENEVA-IoT</u> ● <u>http://bit.ly/ITU-GENEVA-SG20</u>

2015 Invited Speaker ● Korea Aerospace University (South Korea)

2015 Invited Keynote ● South Korea IoT 2015 ● <a href="http://www.iot-conference.org/iot2015/program/">http://www.iot-conference.org/iot2015/program/</a>

2015 Invited Speaker ● Strategic Advisory Council – Huawei Corporation

2015 Invited Speaker • University of Salamanca (Spain)

2015 Invited Keynote ● III – Big Data Conference (Taipei, Taiwan)
 2015 Invited Keynote ● Healthcare IoT Forum at NCKU (Tainan, Taiwan)
 2016 Invited Speaker ● Mobile World Congress (Barcelona, Spain)

2016 Keynote and Organizing Committee – Industrial Chair for ILS, Bordeaux, FR ● <a href="http://ils2016conference.com/committee/">http://ils2016conference.com/committee/</a>

2016 Invited Keynote ● Industrial IoT Summit ● <u>www.industrialiotseries.com/usa/</u>

2016 Invited Speaker ● Strategic Advisory Board – TE Connectivity ● www.te.com/usa-en/home.html

2016 Invited Speaker ● Huawei STW (Science and Technology Workshop) Shenzhen, China

2016 Panel Member • US GAO / National Academy of Science / National Academy of Engineering − Expert Panel on IoT Policy
2016 Invited Plenary • Global IoT CESIS (Berlin) • www.vdi-wissensforum.de/en/cesis-global-internet-of-things-conference/

2017 Invited Speaker ● CIO/CTO Council ● Koch Industries "Translational Engineering"

2017 Panel Member ● ISPIM Toronto - Smart Cities ● <a href="https://www.ispim-innovation-forum.com/">https://www.ispim-innovation-forum.com/</a>
2017 Advisor, Advanced Silicon Group ● <a href="http://www.advancedsilicongroup.com/our-team.html">http://www.advancedsilicongroup.com/our-team.html</a>

### **KEY PUBLICATIONS**

- E. S. McLamore, S. Datta and D. Jenkins (2017) Convergence of nanobiosensors and machine learning for mobile health (in preparation)
- Y. Rong, A.V. Padron, K. J. Hagerty, N. G. Nelson, Song Chi, N. O. Keyhani, J. Katz, **S. Datta**, C. L. Gomes, and E.S. McLamore (2017) Open source *post hoc* support vector machine (SVM) learning for biosensors based on weak protein-ligand interactions (*in press*)
- Datta, S. (2017) Digital Transformation https://dspace.mit.edu/handle/1721.1/111021
- **Datta, S.** and Goldman, J.M. (2017) Healthcare Digital Transformation of Healthcare Value Chain: Emergence of Medical IoT (World Health Strategy ebook www.fhti.org) See "Healthcare" MIT Library <a href="https://dspace.mit.edu/handle/1721.1/107893">https://dspace.mit.edu/handle/1721.1/107893</a>
- **Datta, S.** (2017) Cybersecurity Personal Security Agents for People, Process, Atoms and Bits. *Journal of Innovation Management* 1 <u>5</u> 4-13 www.open-jim.org/article/view/397/227 or http://hdl.handle.net/10216/103566 and https://dspace.mit.edu/handle/1721.1/111021
- Datta, S. (2016) Digital Twins https://arxiv.org/ftp/arxiv/papers/1610/1610.06467.pdf
- Datta, S. (2016) Intelligence in Artificial Intelligence https://arxiv.org/ftp/arxiv/papers/1610/1610.07862.pdf
- **Datta, S.** (2015) Dynamic Socio-Economic Disequilibrium. *Journal of Innovation Management 3* **<u>3</u>** (4-9) <a href="http://feupedicoes.fe.up.pt/journals/index.php/IJMAI/article/view/190/133">http://feupedicoes.fe.up.pt/journals/index.php/IJMAI/article/view/190/133</a> and <a href="https://dspace.mit.edu/handle/1721.1/111021">https://dspace.mit.edu/handle/1721.1/111021</a>
- **Datta, S.** (2012) Unified Theory of Relativistic Identification of Information in a Systems Age: Convergence of Unique Identification with Syntax and Semantics through Internet Protocol version 6 (IPv6). *International Journal of Advanced Logistics* <u>1</u> 66-82 MIT ESD <a href="http://dspace.mit.edu/handle/1721.1/41902">http://dspace.mit.edu/handle/1721.1/41902</a> and in **CHAPTERS** <a href="https://dspace.mit.edu/handle/1721.1/111021">https://dspace.mit.edu/handle/1721.1/111021</a>
- **Datta, S.** (2011) BIO-INSPIRED ENERGY FUTURE QUEST FOR INTELLIGENT MITOCHONDRIA AND LIQUID FUELS. *International Journal of Electronic Business Management* **9** 1-10 <a href="http://dspace.mit.edu/handle/1721.1/59804">http://dspace.mit.edu/handle/1721.1/59804</a>
- **Datta, S.** (2011) Future of Healthcare: Bio-Informatics, Nano-Sensors and Emerging Innovations (Chapter 8 in *Nanosensors: Theory and Applications in Industry, Healthcare & Defense* ed TC Lim) CRC Press <a href="http://dspace.mit.edu/handle/1721.1/58972">http://dspace.mit.edu/handle/1721.1/58972</a> <a href="http://www.crcpress.com/product/isbn/9781439807361">http://www.crcpress.com/product/isbn/9781439807361</a> and <a href="http://esd.mit.edu/WPS/2008/esd-wp-2008-17.pdf">http://esd.mit.edu/WPS/2008/esd-wp-2008-17.pdf</a>
- **Datta, S.,** Graham, D.P., Sagar, N., Doody, P., Slone, R. and Hilmola, O-P. (2009) Forecasting and Risk Analysis Supply Chain Management: GARCH Proof of Concept (Chapter 10 in *Supply Chain Risk and Vulnerability: Tools and Methods for Supply Chain Decision Makers* editors Wu, T. and Blackhurst, J.) Springer-Verlag http://dspace.mit.edu/handle/1721.1/43948
- **Datta, S.** (2008) WiFi Meet FuFi: Disruptive Innovation in Logistics Catalyzed by Energy. *International Journal of Electronic Business Management* **6** 117-119 http://dspace.mit.edu/handle/1721.1/41897
- Datta, S. (2008) Auto ID Paradigm Shifts from IoT to Unique Identification of Individual Decisions in System of Systems (ESD-WP-2008-09)
- **Datta, S.** (2008) Will Nano-Butlers Work for Micro-Payments? Innovation in Business Services Model may Reduce Cost of Delivering Global Healthcare Services (ESD-WP-2008-17) Published by CRC Press
- Datta, S. (2008) A Portfolio Approach for Purchasing Systems: Impact of Switching Point (ESD-WP-2008-07)
- Datta, S. (2007) Decision Support and Systems Interoperability in Global Business Management (ESD-WP-2007-24)
- **Datta, S.** (2007) Unified Theory of Relativistic Identification of Information in a Systems Age: Proposed Convergence of Unique Identification with Syntax and Semantics through Internet Protocol version 6 (ESD-WP-2007-17)
- Datta, S. (2007) Advances in Supply Chain Management: Potential to Improve Forecasting (ESD-WP-2006-11)
- Datta, S, Lyu, J. and Chen, P-S. (2007) Decision Support and Systems Interoperability in Global Business Management. *International Journal of Electronic Business Management* <u>5</u> 255-265 <a href="http://esd.mit.edu/WPS/2007/esd-wp-2007-24.pdf">http://esd.mit.edu/WPS/2007/esd-wp-2007-24.pdf</a> <a href="http://140.114.54.215/IJEBM/IJEBM">http://140.114.54.215/IJEBM/IJEBM</a> <a href="http://state-page-vb">static/Paper-V5</a> <a href="http://state-page-vb">N4/A01.pdf</a> and <a href="http://dspace.mit.edu/handle/1721.1/41917">http://dspace.mit.edu/handle/1721.1/41917</a>
- **Datta, S.,** Granger, C. W. J., Barari, M. and Gibbs, T. (2007) Management of Supply Chain: an alternative modeling technique for forecasting. *Journal of the Operational Research Society* **58** 1459-1469 <a href="http://dspace.mit.edu/handle/1721.1/41906">http://dspace.mit.edu/handle/1721.1/41906</a>
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- Datta, S. (2002) Agents: Where Artificial Intelligence Meets Natural Stupidity http://dspace.mit.edu/handle/1721.1/41914
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**Datta S**, Magge S, Madison L, Jameson JL. (1992) Thyroid Hormone Receptor Mediates Transcriptional Activation and Repression of Different Promoters. Molecular Endocrinology <u>6</u> 815-825 <a href="http://dspace.mit.edu/handle/1721.1/42834">http://dspace.mit.edu/handle/1721.1/42834</a>

**Datta S**, Soong CJ, Wang DM, Harter ML. (1991) Purified Adenovirus 289R E1A Protein Stimulates Pol III Transcription in vitro by altering transcription factor IIIC. J. Virology **65** 5297-5304 (http://jvi.asm.org/cgi/reprint/65/10/5297)

Putlitz J, **Datta S**, Madison L, Jameson JL. (1991) Human Thyroid Hormone Receptor Produced in Recombinant Baculovirus-infected Insect Cells. Biochem & Biophys Research Communication <u>175</u> 285-290 <a href="http://dspace.mit.edu/handle/1721.1/42901">http://dspace.mit.edu/handle/1721.1/42901</a>

Chatterjee VKK, Nagaya T, **Datta S**, Madison L, Rentoumis A, Jameson JL. (1991) Thyroid Hormone Resistance Syndrome: Inhibition of Normal Receptor Function by Mutant Thyroid Hormone Receptors. J. of Clinical Investigation <u>87</u> 1977-1984 http://dspace.mit.edu/handle/1721.1/42900

Rentoumis A, Chatterjee VKK, Madison L, **Datta S**, Gallagher G, DeGroot LJ, Jameson JL. (1990) Negative and Positive Transcriptional Regulation by Thyroid Hormone Receptor Isoforms. Molecular Endocrinology <u>4</u> 1522-1531 http://dspace.mit.edu/handle/1721.1/42902

Datta, S. (1989) Transcriptional Activities of the 289 amino acid Adenovirus 2 E1A Protein in vitro (PhD thesis) Rutgers University School of Medicine, UMDNJ Graduate School of Biomedical Sciences, Rutgers University, New Jersey, USA

#### **BOOK CHAPTERS**

### DIGITAL TRANSFORMATION • HEALTHCARE INNOVATION • OPERATIONS MANAGEMENT

Datta, S. (2017) Digital Transformation • MIT Libraries - https://dspace.mit.edu/handle/1721.1/111021 (in preparation)

Datta, S. and Goldman, J.M. (2017) Healthcare - Digital Transformation of the Healthcare Value Chain: Emergence of Medical Internet of Things (MIoT) may need an Integrated Clinical Environment, ICE (World Health Strategy e-book ● www.fhti.org) Listed as (pdf) "Healthcare" in MIT Libraries - https://dspace.mit.edu/handle/1721.1/107893

Datta, S. (2013) Conscience and Common Sense • http://bit.ly/Book-by-S-Datta • ISBN 978-1492857242

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Datta, S. (2008) Auto ID Paradigm Shifts from IoT to Unique Identification of Individual Decisions in System of Systems (ESD-WP-2008-09)

**Datta, S.** (2008) Will Nano-Butlers Work for Micro-Payments? Innovation in Business Services Model may Reduce Cost of Delivering Global Healthcare Services (ESD-WP-2008-17) Published by CRC Press

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# PAPERS - ARTICLES - ESSAYS including IoT • IIoT • ENERGY • HEALTHCARE • RFID • SUPPLY CHAIN • INDUSTRIAL INTERNET • SYSTEMS (SoS)

E. S. McLamore, S. Datta and D. Jenkins (2017) Convergence of nanobiosensors and machine learning for mobile health (in preparation)

Y. Rong, A.V. Padron, K. J. Hagerty, N. G. Nelson, Song Chi, N. O. Keyhani, J. Katz, **S. Datta**, C. L. Gomes, and E.S. McLamore (2017) Open source *post hoc* support vector machine (SVM) learning for biosensors based on weak protein-ligand interactions (in press)

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- **Datta, S.** and Goldman, J.M. (2017) Healthcare Digital Transformation of Healthcare Value Chain: Emergence of Medical IoT (World Health Strategy ebook www.fhti.org) See "Healthcare" MIT Library <a href="https://dspace.mit.edu/handle/1721.1/107893">https://dspace.mit.edu/handle/1721.1/107893</a>
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- **Datta, S.** (2015) Dynamic Socio-Economic Disequilibrium. *Journal of Innovation Management 3* <u>3</u> (4-9) <a href="http://feupedicoes.fe.up.pt/journals/index.php/IJMAI/article/view/190/133">http://feupedicoes.fe.up.pt/journals/index.php/IJMAI/article/view/190/133</a> and in **CHAPTERS**
- Datta, S. (2014) Humanity Needs Dreamers L'humanité a besoin rêveurs http://dspace.mit.edu/handle/1721.1/86935
- **Datta, S.** (2012) Unified Theory of Relativistic Identification of Information in a Systems Age: Convergence of Unique Identification with Syntax and Semantics through Internet Protocol version 6 (IPv6). *International Journal of Advanced Logistics* <u>1</u> 66-82 http://dspace.mit.edu/handle/1721.1/41902 and in **CHAPTERS** https://dspace.mit.edu/handle/1721.1/111021
- Datta, S. (2011) BIO-INSPIRED ENERGY FUTURE QUEST FOR INTELLIGENT MITOCHONDRIA AND LIQUID FUELS. *International Journal of Electronic Business Management* 9 1-10 http://dspace.mit.edu/handle/1721.1/59804
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- Datta, S. (2011) Being Digital Business Services in Emerging Technologies <a href="http://dspace.mit.edu/handle/1721.1/62251">http://dspace.mit.edu/handle/1721.1/62251</a>
- Datta, S. (2011) Paradigms Driven by Paradoxes Vertically Integrated Health <a href="http://dspace.mit.edu/handle/1721.1/62251">http://dspace.mit.edu/handle/1721.1/62251</a>
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- **Datta, S.** (2011) Micro-Scale Renewable Energy Manufacturing Photo Bio Butanol (C4) and Photo Bio Glucose (C6) <a href="http://www.mediafire.com/shoumen\_datta">http://www.mediafire.com/shoumen\_datta</a>
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PAPERS MOLECULAR MEDICINE

Datta, S. 1989. Transcriptional Activities of the 289 amino acid Adenovirus 2 E1A Protein in vitro (PhD thesis) Rutgers University School of Medicine, UMDNJ Graduate School of Biomedical Sciences

**Datta S**, Soong CJ, Wang DM, Harter ML. 1991. Purified Adenovirus 289R E1A Protein Stimulates Pol III Transcription in vitro by altering transcription factor IIIC. J. Virology **65** 5297-5304 (http://ivi.asm.org/cgi/reprint/65/10/5297)

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Putlitz J, **Datta S**, Madison L, Jameson JL. 1991. Human Thyroid Hormone Receptor Produced in Recombinant Baculovirus-infected Insect Cells. Biochem & Biophys Research Communication **175** 285-290 <a href="http://dspace.mit.edu/handle/1721.1/42901">http://dspace.mit.edu/handle/1721.1/42901</a>

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PRESENTATIONS MOLECULAR MEDICINE

**Datta S**, Spangler R, Bruner M, Harter ML. Activation of viral and non-viral promoters by the Adenovirus 289R E1A protein in cell-free extracts. ICRF Tumor Virus Meeting, 1987. Cambridge, UK.

Datta S, Chatterjee P, Losada MC, Flint SJ, Harter ML. An E. coli produced E1A 289R protein and a synthetic E1A 49R peptide variably regulates Pol II and Pol III transcription in vitro. Tumor Virus Meeting, 1988. Cold Spring Harbor Lab

**Datta S**, Wang DM, McGrath M, Westerdahl C, Harter ML. Bacterially produced E1A 289R activates Pol III transcription through TFIIIC. ICRF Tumor Virus Meeting, 1989. Cambridge, UK.

Chatterjee VKK, Madison L, Rentoumis A, **Datta S**, Gallagher G, Jameson JL. Negative regulation by thyroid hormone receptors. American Association for Cancer Research, 1990. San Diego, CA.

Jameson JL, Nagaya T, Madison L, Chatterjee VKK, **Datta S**. Transcriptional activation and repression by thyroid hormone receptors. Abstract. ICN-UCLA Symposia, 1991. Keystone, CO.

Nagaya T, Chatterjee VKK, Madison L, **Datta S**, Rentoumis A, Jameson JL. Generalized Thyroid Hormone Resistance. MGH Symposium, 1991. Boston.

**Datta S**, Magge S, Putlitz J, Jameson JL. Transcriptional activation and repression by thyroid hormone receptors: Development of an in vitro transcription assay. MGH Symposium, 1991. Boston, MA.

**Datta S**, Magge S, Putlitz J, Jameson JL. Repression of a-TSH promoter activity by thyroid hormone receptor in an in vitro transcription assay. Endocrine Society Meetings, 1991. Washington, DC.

Nagaya T, **Datta S**, Madison L, Ahlquist JAO, Magge S, Hwang YT, Jameson JL. Structural determinants of thyroid receptor interactions with DNA. American Thyroid Association 1991. Boston.

### Summer Research in Chemistry - Transition Metal Nano-Clusters

C. Lampropoulos, K. A. Johnson, A. Javed, J. M. Cain, **S. Datta**, A. M. Mowson, C. Papatrantafyllopoulou, D. Alexandropoulos, A. J. Tasiopoulos, T. C. Stamatatos, G. Christou (2013) *The search for new molecular magnetic materials*. Poster. ACS, UFL, FL. <a href="http://tinyurl.com/SMM-ACS">http://tinyurl.com/SMM-ACS</a>

# GRANTS • PUBLIC CONTRACTS • REVIEW PANELS • STEERING COMMITTEE • BOARDS

1996-1997	Award $\rightarrow$ US Department of Commerce, National Telecommunications Information Infrastructure Authority (NTIIA) Project $\rightarrow$ Interactive University Program (online university – high school partnership for students and teachers) Collaborators $\rightarrow$ University of California, Berkeley and City and County of San Francisco Public Schools
1998-1999	Contract → State of California, Department of Education  Program → State Standards for Mathematics & Science  Collaborator → Associated Scientists (Co-Founders : Shoumen Datta, Glenn Seaborg, Stan Metzenberg)
2006-2009	Award – European Union (EU) Commission on Intelligent Systems • FP6 Project – SMART • RFID Integration • http://cordis.europa.eu/projects/rcn/80467_en.html Collaborators – Trinity College, Dublin and MIT Forum, Massachusetts Institute of Technology
2014-2015	Steering Committee, Time Aware Applications, Computation and Communication Systems • www.taaccs.org CPS, PWG • NIST (National Institute of Standards and Technology), US Department of Commerce • <a href="https://www.nist.gov">www.nist.gov</a>
2015	US DoT ITS <u>DTFH6115R00003</u> − II <u>C Proposal</u> for Connected Vehicles • <u>http://bit.ly/IIC-2013-2016-SD</u>
2015	Advisory Boards ● ICE Alliance ( <u>www.icealliance.org</u> ) ● EU IoT 2.0 ( <u>http://www.ict-citypulse.eu</u> ) ● U-IoT (EU H2020)
2016	Advisory Boards • EU-Japan Horizon 2020 project BigClouT • EU – S Korea Horizon 2020 project WiseIoT EU Horizon 2020 Project [a] Healthcare Data (SC1-PM-04) [b] Smart Cities / Smart Living (Scale UP IoT) Coordinated grants and funding relevant to the Industrial Internet Consortium in US and EU (table in full CV version) • IIC LSTB Summary Report - <a href="http://bit.ly/IIC-2013-2016-SD">http://bit.ly/IIC-SC-NRT</a> • <a href="http://bit.ly/SD-IIC-1-100">http://bit.ly/IIC-1-100</a> • IIC Letters of Support (LoS) for EU Horizon 2020 proposals (2015-2016) <a href="http://bit.ly/IIC-LoS">http://bit.ly/IIC-LoS</a>
2017	US Government Accountability Office and US National Academy of Sciences – Panel on Technology Assessment of IoT requested by US Senate ● Technology Assessment – Internet of Things ● <a href="www.gao.gov/products/GAO-17-75">www.gao.gov/products/GAO-17-75</a>
2017	Cybersecurity for Medical Devices • US Department of Homeland Security and FDA (PI - Dr Julian Goldman, MGH, HMS)

Proposal Related Documentation History http://bit.ly/SD-IIC-1-100	Government Agency (submission/preparation)	Funding Approved	Comments / Information
Autonomous Transportation	US Dept of Transportation (submitted 3/2015;		Did not receive rejection
http://bit.ly/DOT-DOT-DOT	prep 3/2014 to 3/2015)		or funding (\$20 million)
BigClouT EU-JP	EU Horizon 2020 (submitted 12/2015; prep	€ 3 million	Funding Starts Sep/Oct
http://bit.ly/Project-Brief	4/2014 to 12/2015)		2016
WiseloT EU-SK	EU Horizon 2020 (submitted 12/2015; prep	€ 4 million	Funding Starts Sep/Oct
http://bit.ly/Project-Brief	4/2014 to 12/2015)		2016
ACTIV AGE	EU Horizon 2020 (submitted 4/2016; prep	€ 20 million	Funding Starts Sep/Oct
http://bit.ly/Project-Brief	4/2015 to 4/2016)		2016
Internet of Food	EU Horizon 2020 (submitted 4/2016; prep	€ 30 million	Funding Starts Sep/Oct
http://bit.ly/Project-Brief	4/2015 to 4/2016)		2016
WLIVE Wearables	EU Horizon 2020 (submitted 4/2016; prep		Not funded for FY 2016
http://bit.ly/Project-Brief	4/2015 to 4/2016)		
LSP Scale-up-IoT	EU Horizon 2020 (submitted 4/2016; prep		Not funded for FY 2016
http://bit.ly/SCPPP-07	4/2015 to 4/2016)		
Healthcare Data	EU Horizon 2020 (submitted 4/2016; prep		Not funded for FY 2016
http://bit.ly/HCPPP-04	9/2015 to 4/2016)		
Healthcare Robotics	EU Horizon 2020 (submitted 4/2016; prep		Not funded for FY 2016
	9/2015 to 4/2016)		