



Zhibo PANG

PHD | MBA | ADJUNCT PROFESSOR

PROFILE

Passionate innovator and technical leader in digital transformation with 20-year experiences.

Spanning the entire innovation procedure, skilled to play the roles of visionary leader, concept creator, resource investigator, cross-organizational coordinator, technical mentor, hardcore coder, product manager, and customer communicator.

FACTS

- 3 times “Inventor of the Year Award” by ABB Corporate Research Sweden
- 70+ patents applications (24 granted)
- 100+ journal and 50+ conference papers
- 30+ invited talks
- 6000+ Google Scholar citations
- Associate Editor of 3 IEEE journals
- 10+ PhD/postdoc and 30+ students

KEYWORDS

- Industry4.0 •Healthcare4.0
- Internet-of-Things •Machine learning/AI •Robotics •Control system •Wireless communication
- Cloud/edge computing
- Cybersecurity •Functional safety
- System-on-Chip •FPGA •Process automation •Power grids
- Biomedical informatics

CONTACT

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<https://scholar.google.com/citations?user=S14M7yMAAAAJ&hl=en>

EXPERIENCE

SENIOR PRINCIPAL SCIENTIST (2019.10-PRESENT), **PRINCIPAL SCIENTIST** (2017.8-2019.9), **SENIOR SCIENTIST** (2016.1-2017.7), **SCIENTIST** (2013.07-2015.12), **ASSOCIATE SCIENTIST** (2011.8-2013.07), **ABB CORPORATE RESEARCH, VASTERAS, SWEDEN**

- Currently holding the highest specialist title in industrial communication appointed by global CTO, mentoring the R&D activities globally in this area
- Currently leading the research on cloud/edge/5G/6G enabled and AI-powered automation system and robotics solutions with extensive collaborations with leading ICT vendors (E, I, C, M as first letter of name), ongoing, limited public information
- Led the research on communication architecture, protocols, device interfaces, and cloud software for next generation process automation and DCS solutions with cloud-friendly and open infrastructure in 2022.
- Led the research on reliable and scalable Industrial IoT and cloud service architecture, protocols, and software for new generation electrical drives and motors in 2022.
- Made major contributions to ABB’s 5G strategy and defined roadmap for the Connected Systems technology area in 2021
- Led the research on communication and computing architecture and wireless safety for service robots, demonstrated in ABB Mobile YuMi in 2019
- Led the Innovation Big Bets on Smart Logistics – Automation Track, enabled partnership with ABB’s strategic customers JD.COM in e-commerce and logistics industry in 2018
- Led the research of high-performance wireless communications (WirelessHP) for critical control systems with microsecond level latency in 2017, far beyond the start-of-the-art, contributed key patents to the ABB Tropos Wireless Mesh portfolio, contributed disruptive technologies for the ABB HVDC (high voltage direct current) business in 2018 (now Hitachi Energy), impacted 6G visions and basic research at top universities (MIT, UC Irvine, UPenn, Oxford, Caltech, etc.)
- Led the research on natively IP based communication for building automation, productized in the ABB free@home smart building solution in 2016 and Welcome IP door entry system in 2017.

- Developed one of the earliest functional implementations of WirelessHART stack for industrial wireless sensor networks in 2012

PHD RESEARCHER, ROYAL INSTITUTE OF TECHNOLOGY (KTH), STOCKHOLM, SWEDEN, 2007.12-2011.8

- Conceptualized and demonstrated one of the earliest prototypes of Intelligent Medicine Box (iMedBox) for IoT-based in-home healthcare in 2009
- Developed pioneering IoT-based fresh food tracking solution in 2010 which was followed up by 100M CNY public funding and commercialized in China

START-UP ENTREPRENEUR, SHANGHAI SHENGYUE ELECTRONICS TECH CO. LTD., CHINA (2007.7-2008.7), AND **AMBIGUA MEDITO AB, SWEDEN** (2009.07-2011.07)

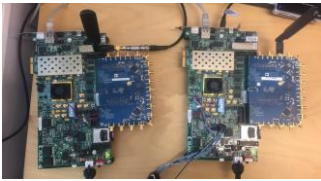
SELECTED RESULTS



•ABB Mobile YuMi (2019)



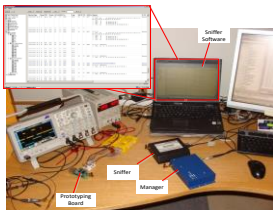
•ABB Tropos Wireless Mesh (2018)



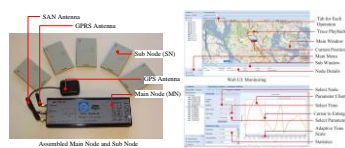
•ABB WirelessHP prototype (2017)



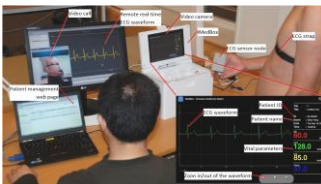
•ABB free@home (2016)



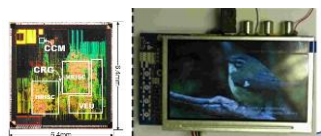
•ABB WirelessHART prototype (2012)



•KTH Fresh Food Tracker (2010)



•KTH iMedBox (2009)



•Application processor CC1600 (2008)

- Led start-up team of 10+ engineers, developed application processor SoC (system-on-chip) with Linux OS and multi-standard high-definition video decoder (H.264, MPEG4, RMVB, etc.) for personal multimedia player in 2008

- Developed network-on-chip (NoC) research platform using FPGA which can implement 64 ARM9 CPU cores in 2009

DEPARTMENT MANAGER (2004.7-2007.7), **PROJECT LEADER** (2003.7-2004.6), **CHIP DESIGN ENGINEER** (2002.7-2003.6), **NATIONALCHIP SCI&TECH CO. LTD., HANGZHOU, CHINA**

- Led R&D team of 80+ engineers, delivered one of the earliest single-chip DVB-S (digital video broadcast - satellite) receiver SoC (system-on-chip) in 2005 which had occupied a major share of global market, winning the "National Great Invention Award" awarded by the Ministry of Information Industry of China

ACADEMIC APPOINTMENTS

Adjunct Professor on Industrial Wireless Communication, Department of Intelligent Systems, Royal Institute of Technology (KTH), Stockholm, Sweden, 2021.11- present

Adjunct Professor on Industrial IoT, School of Electrical and Information Engineering, University of Sydney, Sydney, Australia, 2019.2-present

Industry Activities Committee, Industrial Electronics Society of IEEE, 2020-present

TC Co-Chair, Technical Committee on Industrial Informatics, Industrial Electronics Society of IEEE, 2017-present

EDUCATION

PhD in Electronic and Computer Systems, Royal Institute of Technology (KTH), Stockholm, Sweden, 2010.5-2013.7

MBA in Innovation and Growth, University of Turku, Turku, Finland, 2009.10-2012.10

EU-China Managers Exchange and Training Program (METP), Manchester Metropolitan University, ESCP Europe Paris, and Solvay Brussels School of Economics and Management, 2010.5-2010.10

Bachelor of Engineering in Electronic Engineering, Zhejiang University, Hangzhou, China, 1998.9-2002.6

KEY SKILLS AND CHARACTERISTICS

Soft skills: business eco-system analysis, competition strategy, patenting, business planning, project portfolio management, project leadership, technical marketing, mentorship, scientific writing

Hard skills: analysis, modeling, simulation, prototyping, experimenting, instrumentation

Hands-on skills: Python (10k lines), C/C++/C# (x 100k), Verilog (x 10k), Matlab (x 10k), database, web server, web frontend, 5G, WiFi6, PROFINET, TSN, OPC UA, hypervisor, container, Azure, Linux, RTOS, FPGA, SoC, signal processing, high-speed PCB design, RF/analog circuits, signal chain

ACTIVITIES AND INTERESTS

•Hiking •Swimming •Skiing •Gardening •Photography •Woodwork