

Plenary Speaker 1: Professor Yingmin JIA (Beihang University, P.R. China)

Title: PS-1 will be appeared soon.

website <http://control.buaa.edu.cn/>



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Prof. Yingmin JIA received the B.S. degree in control theory from Shandong University, Ji'nan, China, in January 1982, and the M.S. and Ph.D. degrees both in control theory and applications from Beihang University (Beijing University of Aeronautics and Astronautics, BUAA), Beijing, China, in 1990 and 1993, respectively. Then, he joined the Seventh Research Division at Beihang University, where he is currently Professor of automatic control. From February 1995 until

February 1996 he was a visiting professor with the Institute of Robotics and Mechatronics of the German Aerospace Center (DLR), Oberpfaffenhofen, Germany. He held an Alexander von Humboldt (AvH) research fellowship with the Institute of Control Engineering at the Technical University Hamburg-Harburg, Hamburg, Germany, from December 1996 until March 1998, and a JSPS research fellowship with the Department of Electrical and Electronic Systems at the Osaka Prefecture University, Osaka, Japan, from March 2000 until March 2002. He was a visiting professor with the Department of Statistics at the University of California Berkeley from December 2006 until March 2007.

Prof. JIA was the recipient of the National Science Fund for Distinguished Young Scholars in 1996, and was appointed as Chang Jiang Scholar of the Ministry of Education of China in 2004. He has been Chief Scientist of the National Basic Research Program of China (973 Program) since 2011. He has authored and co-authored numerous papers and a book entitled Robust H_∞ Control (Science Press, 2007), and in particular, he won the Second Prize of National Technical Innovation Award in 2015, and the First Prize in the Natural Science Award of the Ministry of Education in 2017. His current research interests include robust control, adaptive control and intelligent control, and their applications in vehicle systems and industrial processes.

Plenary Speaker 2: Mr. Masanori SUGIYAMA (the Executive Adviser of robotics development of Toyota Motor Corporation, Japan)

Title: PS-2 Toward Life with Partner Robots

- Developing robots with the field trial toward the practical use (2019/01/12 13:10-14:10)

website https://www.toyota-global.com/innovation/partner_robot/



Mr. Masanori SUGIYAMA is the Executive Adviser of robotics development of Toyota Motor Corporation since January 2018. He joined Toyota Motor Corporation in 1984 and was in charge of engine development. He has successfully developed the efficient V6 gasoline-powered engines used globally. In 2005, he was a leader of engine development process reformation. In 2007, he was General Manager of Engine Project Management Div., and then in 2013, he was appointed as Executive General

Manager in charge of all engine development divisions of Toyota. He has been Program Director of Innovative Combustion Technology Project of Cross-ministerial Strategic Innovation Promotion Program supported by Cabinet Office, government of Japan since 2015. In 2017, he was in charge of management of advanced technology development. Currently, he is promoting the development of robots which will be useful in our daily life.

Plenary Speaker 3: Professor Jeffrey Johnson (Open University, UK)

Title: **PS-3** will be appeared soon.

website <http://www.open.ac.uk/people/jhj2#tab1>



I joined the Design Discipline at the OU in 1981 after three years in the Geography Department at Cambridge University working with Graham Chapman and Peter Gould. Before that I was in the Mathematics Department at Essex University working with Ron Atkin on his theory of Q-analysis for social systems. This has developed into what I now call multilevel [hypernetworks](#). This research involves the application of

[jeff.johnson](#)

hypernetwork theory in the design and management of complex social and technical systems at local and global levels in the emerging policy-oriented field of [Global Systems Science](#).

My BA and PhD are in mathematics. I am a Fellow of the Institute of Mathematics and its Applications, a Fellow of the British Computer Society, a Chartered Mathematician and Chartered Engineer. I have been director of various engineering and consulting companies and am the CEO of [Vision Scientific Ltd](#), a company I founded with Phil Picton in 1989. I am a Past President of the [Complex Systems Society](#), and Deputy President of the [UNESCO UniTwin Digital Campus for Complex Systems](#) (CD-DC).

My OU undergraduate teaching has included: creating the CADPAC suite of interactive computer exercises for *T363: Computer Aided Design*; creating the SmartLab suite of interactive computer exercises for *T395 - Mechatronics, Designing Intelligent Machine* and co-authoring with Phil Picton the textbook *Mechatronics: Concepts in Artificial Intelligence*; leading the development of *T183 - Design and the Web*, *T184 - Robotics and the meaning of life*, *A178 - Perspectives on Leonardo*, *TM190 - The Story of Maths*, [T218: Design for Engineers](#), and writing the interactive computer exercises for *T174 - Engineering the Future*. I am currently production and

presentation chair of [T212 Electronics: sensing, logic & actuation](#).(2017), member of the *T312 Electronics* module production team (2019), and member of the team producing the new *Open STEM Laboratory* giving students remote access to hand-on electronics and robotics experiments.

I led the teams creating the MOOCS for the CS-DC: [Global Systems Science and Policy](#) and [Systems thinking and complexity](#).

My recent books are [Non-Equilibrium Social Science](#) (2017) for Policy and [Hypernetworks in the Science of Complex Systems](#) (2014).

I am currently a partner on the Erasmus Da.Re. Project ([Data Science Pathways to Reimagine Education](#)) which is creating 150 hours blended online and face-to-face education in data science.

My OU PhD supervisions include: Richard Murphy -*Constraint-based design synthesis for computer aided design* (1993); Meng Hua - *A neural network based strategy for robot navigation in dynamic environments* (1994), Paul Margerison - *An algorithmic and interactive approach to computer art* (1995), George Glaze - *Graphic design evaluation: towards a rule-based system* (1995), David Durling - *Teaching with style: computer aided instruction, personality and design education* (1996), Claudia Eckert - *Intelligent support for knitwear design* (1997), Linda Waddoups - *A binary representation for built form* (2001), Jack Cawkwell - *An automated guided vehicle for local transport* (2004), Sunny Bains - *Physical computation and embodied artificial intelligence* (2004), Nick Scott - *Measures from complexity science provide manufacturing companies with insights previously unavailable to them* (2004), John Welford - *Artificial Intelligent for classifying oral lesions* (2005), Pejman Iravani - *An architecture for multilevel learning and robotic control based on concept generation* (2005), Valery Rose - *Evolutionary adaptive self-learning machine vision* (2010), Joan Serras - *Multidimensional multilevel representation for traffic simulation models* (2008), James Law - *Abstracting multidimensional concepts for multilevel decisionmaking in multirobot systems* (2008), Vikas Chandra - *Patenting and publication networks in stem cell research* (2009), Paul Morley. *Investigation into automated laundry sorting* (2012), Anthony

Johnston - *Sensory augmentation for navigation in difficult urban environments by people with visual impairment* (2013), Iain Kusel - *A computational model of the emergence of seriation in the young child* (2014), Tasos Varoudis - *Augmented visibility in architectural space influencing movement patterns* (2014), Bjorn Madsen - *How to Make the Most Productive Intervention in a Complex Economic System* (2015). Cristian Jimenez-Romero - *A heterosynaptic spiking neural system for the development of Autonomous agents* (2017). Pam Garthwait - *Resilient Hospital Refurbishment* (2017). Current supervision: Charlotte Foster: *Video production in the social welfare charity sector – processes, narrative and ethics* (supported by [AHRC Design Star](#)). Richard Charlesworth - *Representing multilevel systems for self-programming machines*, Phil Davies - *Systems thinking and complexity in policing*, Ruggero Rossi, *Multilevel hypernetworks in team robotics*.