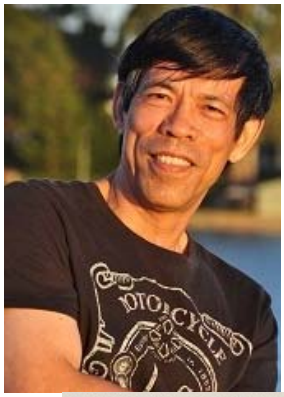
# Minyue Fu

THE UNIVERSITY OF NEWCASTLE
AUSTRALIA





## Welcome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Last update: 20/11/2015


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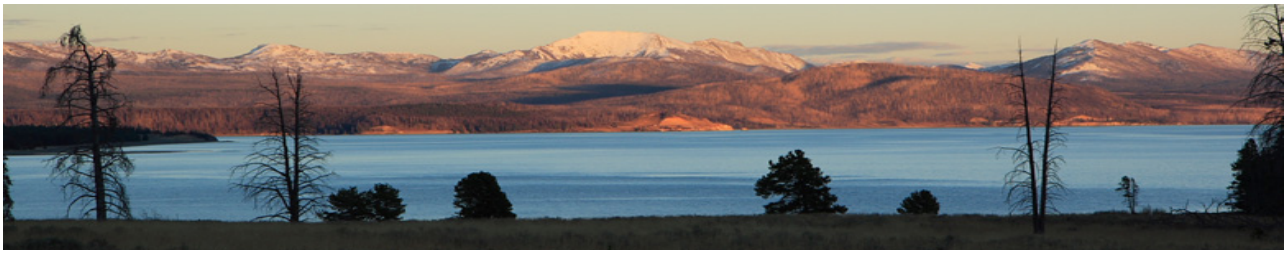
# Brief Biography

Minyue Fu received his Bachelor's Degree in Electrical Engineering from the University of Science and Technology of China, Hefei, China, in 1982, and M.S. and Ph.D. degrees in Electrical Engineering from the University of Wisconsin-Madison in 1983 and 1987, respectively.

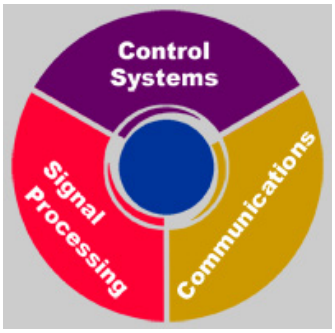
From 1983 to 1987, he held a teaching assistantship and a research assistantship at the Uiniversity of Wisconsin-Madison. He worked as a Computer Engineering Consultant at Nicolet Instruments, Inc., Madison, Wisconsin, during 1987. From 1987 to 1989, he served as an Assistant Professor in the Department of Electrical and Computer Engineering, Wayne State University, Detroit, Michigan. For the summer of 1989, he was employed by the Universite Catholoque de Louvain, Belgium, as a Maitre de Conferences Invited. He joined the Department of Electrical and Computer Engineering, the University of Newcastle, Australia, in 1989 and was promoted to a Chair Professor in Electrical Engineering in 2002. He has served as the Head of Department for Electrical and Computer Engineering and Head of School of Electrical Engineering and Computer Science over a period of 7 years. In addition, he was a Visiting Associate Professor at University of Iowa in 1995-1996, a Visiting Professor at Nanyang Technological University, Singapore, 2002, and Visiting Professor at Tokyo University in 2003. He has held a ChangJiang Visiting Professorship at Shandong University, a visiting Professorship at South China University of Technology, and a Qian-ren Professorship at Zhejiang University in China.

He was elected to a Fellow of IEEE in late 2003. His main research interests include control systems, signal processing and communications. His current research projects include networked control systems, multi-agent systems, smart electricity networks and super-precision positioning control systems. He has been an Associate Editor for the IEEE Transactions on Automatic Control, IEEE Transactions on Signal Processing, Automatica, and Journal of Optimization and Engineering.




Selected Publications
Complete Publications
Publications by Areas
Control Systems
Signal Processing
Communications
Sample Research Projects
Networked Control Systems
Smart Electricity Grid
Micro-actuator Control

Home
Research Centre (CDSC)




# My Research Areas

My research interests cover three, sort of related, areas. My work in Control Systems has been accumulated over two decades of stubborn pursude of "good" methods for control design and analysis, mostly to do with dynamic systems with uncertainties in their models or unreliable communications. My latest interest in this area lies in three topics: *control over communication networks* , *smart electricity networks* and *high precision control using micro-actuators*.

I have also worked in Signal Processing for quite long. What facinates me about this area is that ad-hoc tools used by "engineers" can often be made rigorous and enhanced by using some simple mathematics. I work on model-based signal processing, studying estimation problems to do with dynamic systems. I am currently chairing a signal processing research program in a research centre specialised in complex dynamic systems. My recent interests include *network-based state estimation*, *system identification with communication constraints* and *signal encoding with time delay constraints*.

Digital Communications is an area I touched upon in recent years, but I am a slow learner here. Problems which catch my attention are the ones to do with fundamental limitations and those related to dynamic systems. I try to use my limited knowledge in Control Systems and Signal Processing to look at coding, decoding and equalisation problems with a different perspective. Once a while, something interesting pops up this way. My current/rencent interests are in *communication networks for smart electricity grids*, *turbo decoding/detection* and *low-density parity-check codes*.