Stephen J. Ren

Personal Data

Place and Date of Birth:	Shanxi, China | 23 July 1991
Address:	29 Jiangjun Road, Nanjing, Jiangsu, China
Phone:	+86 158 9583 1215
Email:	jrenauto@foxmail.com
Blog:	http://www.cnblogs.com/pionerj

Motto:	The very beginning mind itself is the most accomplished mind of true enlightenment.

Research Areas

Control — Uncertain and non-linear systems, control engineering

Disturbance observer-based control(DOBC), sliding-mode control(SMC), repetitive control (RC), model-predictive control (MPC), etc.

Power — Permanent-magnet synchronous motors (PMSM), DC/AC converters

Industrial servo applications, e.g. manipulators, grid-connected inverters in distributed generation (DG).

Education

Expected Apr. 2017 — **Master Degree** in Engineering
Control Engineering, **Nanjing University of Aeronautics and Astronautics**
Major: Permanent-magnet AC servo system | Advisor: AProf. Yali Xue
GPA: 3.5/5.0 | Detailed List of Exams

Jun. 2014 — **Bachelor Degree** in Engineering
Automation, **Nanjing University of Aeronautics and Astronautics**
Major: Flight control system | Advisor: Prof. Yongqiang Ye
GPA: 3.8/5.0 | Detailed List of Exams

Work Experience

Jul. 2014 - May 2015 — Project Intern at ESTUN Automation Technology Co. Ltd., Nanjing

This research aims at developing of deadbeat predictive control strategy to improve the dynamic performance of permanent-magnet ac servo drives. The control algorithm was implemented with C language running in TI TMS320F2812.

Skills & Languages

Programs:	MS Office, C/C++, MATLAB/Simulink/Stateflow, Simpower, SlidWorks, VHDL/Verilog, HTML/CSS, SQL, JavaScript, LaTeX
Techniques:	Interfacing with microprocessors and actuators/sensors, data acquisition, experimentation, PCB design, layout and fabrication.
Languages:	Native in Chinese; Fluent in English; ABC in Japanese.

Certificates

Mar. 2013 — National Computer Rank Examination (Database Technology), 3rd Grade
Sept. 2011 — Jiangsu Province Computer Rank Examination (C Language), Excellent

Research Grants

Dec. 2013 - May 2014	DSP IP-cores Based SOPC and its Application to Controller Grant from SFEP of NUAA (ZT2013033), ¥4,000 (PI) To solve high resource occupation and complex hardware implementation of repetitive control in embedded control systems, a repetitive controller IP-core was designed for FPGA/SOPC. From the perspective of control algorithm implementation, the repetitive controller IP-core structure was proposed to make it suited to Nios II and an Avalon slave interface was added which enabled it to be easily integrated.
Jur. 2015 - Dec. 2018	Analysis of Relationship Between RC and MPC, Controller Design and their Applications to DC/AC Converters Grant from NSFC (61473145), ¥820,000 The research is to developed some practical modifications for repetitive control schemes used in harmonic distortion compensation, e.g. stability, dynamic response issues.
Jul. 2014 - May 2015	Control of PMSM Drives with High Dynamic Performance Grant from R&D Center, ESTUN Automation Technology Co. Ltd. This project aims at developing of deadbeat predictive control algorithm for PMSM drives with both the zero steady-state error and the improved dynamic performance.

Publications

Degree Thesis

[T1] Jianjun Ren. "Power Line Communication Gateway Based on PL3150 Smart Transceiver," B.Eng. Thesis, Nanjing University of Aeronautics and Astronautics, 2014. (*in Chinese with English abstract, Outstanding Undergraduate Thesis*)

Academic Journal Papers

[J1] Yue Ji, Yali Xue*, **Jianjun Ren**, Huazhen Yan, Yongqiang Ye, Yong Wan. "Research on Robust Current Predictive Control Method for Permanent-Magnet Synchronous Motors Based on Input-Correction Strategy," **Journal of Systems Engineering and Electronics**, vol. xx, no. xx, pp. xxxx–xxxx, xxxx. (*in Chinese, to appear*)

Peer-reviewed Conference Papers

[C1] Huazhen Yan*, **Jianjun Ren**, Yongqiang Ye and Yunpeng Xu. "Design of repetitive controller IP-Core based on Avalon Fabric," In: Proceedings of The 2014 Academic Conference of Undergraduate Students of NUAA, Nanjing, China, 2014. (*in Chinese, Best Paper Award*)

Honors/Awards

Oct. 2013	Merit Student of NUAA
2011 - 2013	Graduate Student Scholarship, 3rd Place, every years
Oct. 2011	Outstanding Volunteer
Oct. 2011	National Endeavor Fellowship of China
Sept. 2010	Freshman Scholarship of NUAA
Apr. 2010	Rui-sheng Wu Scholarship (¥10,000)

Interests and Activities

State-of-the-art of Power Control Technology, Open-Source, Programming
Reading, Calligraphy, Photography, Chinese kungfu, Travelling