JIAHAO CHEN

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Electrical engineering Ph.D. focused in drives, electric machines and direct drive technologies seeking post-doctoral position.

EXPERIENCE

Sept. 2018 – Sept. 2019

Research Scholar, WEMPEC, University of Wisconsin-Madison, USA

- Project: Bearingless motors for industrial application of significant power
  - Machine design and optimization
  - Prototype fabrication
- Advisor: Professor Eric L. Severson

Jan. 2014 – Apr. 2014

Intern in Quality Control Department, Bosch Power Tools (China) Co., LTD

- Used Python and VBA to achieve automatic email generation and quality evaluation computing, which greatly alleviated manual labor. Appreciated by the director for work ethic and communication skills.

EDUCATION

Sept. 2014 – Dec. 2019

Ph.D. in Electrical Engineering, Zhejiang University

- Project: National key basic research program of China (973 project, grant 2013CB035604)
  - Conducted researches in parameter estimation and sensorless control of induction motor drives.
  - Edited final report and power point for project acceptance.
- Thesis: “Adaptive Observer Design for Sensorless Induction Motor Drives”
- Advisor: Professor Jin Huang
- Main subjects: Nonlinear System, Modern Theory of Electromagnetic Field, Transient Analysis of Electric Machines, Linear Electric Machine, Robust Control, Intelligent System Theory.

Sept. 2010 – July 2014

B.Sc. in Electrical Engineering, Zhejiang University

- GPA: 4.24/5
- Thesis: “A Survey on Permanent Magnet Motor Systems”
- Advisor: Professor Jin Huang
- Main subjects: Electric Machinery, Power Electronics Technology, Control Theory, Modern Theory of Permanent Magnet Motor, Digital and Analogical Electronics, Mathematics and Physics, Computer Aided Design, Programmable Logic Controller.

AWARDS

Oct. 2018, Guosong Wang Award, Zhejiang University
Oct. 2018, National Scholarship, Zhejiang University
Dec. 2017, Scholarship from Inovance Technology Co., Ltd, Zhejiang University
Nov. 2015, Social Practice Advanced Individual, Zhejiang University

SKILLS

- Language: Chinese, English (IELTS 7), Japanese
- Programming： C/C++, Python, Matlab, LaTeX
- Circuits: Altium Designer, OrCAD
- Modeling: SolidWorks
- Finite Element Analysis: JMAG, ANSYS
- Programmable Logic Controller: RSLogix

STUDENT ACTIVITIES

Jan. 2013 – June 2013
The 8th Freescale Cup Intelligent Car Competition, Team Leader

- Second prize in Zhejiang zone with placing 6/50.
- Adopted Freescale K60 as the MCU and devised PCB. Combined the outputs of accelerometer and gyroscope via Kalman filter to keep the car up-right and running with two wheels. Extracted the road information by one-dimensional CCD.

Oct. 2012 – May 2013
Student Research Training Program of Zhejiang University, Team Leader

- Communication and interface design using C++ based on Cypress PSoC-3.

Sept. 2011 – Sept. 2012
Guitar Association of Zhejiang University, Vice President

SERVICES

Reviewer

- IEEE journal of emerging and selected topics in power electronics.(2)
- IEEE transactions on energy conversion.(1)
- IEEE transactions on industrial electronics.(7)
- IEEE transactions on power electronics.(6)
- IET electric power applications.(5)
- IET power electronics.(4)
- Journal of control science and engineering.(1)
- IEEE International Electric Machines & Drives Conference (IEMDC) 2019
- IEEE Conference on Electromagnetic Field Computation (CEFC) 2020

Motor Control Simulation Codes (Open Sourced)

- https://github.com/horychen/ACMSIMC_TUT

Motor Design and Optimization Codes (Open Sourced)

- https://github.com/horychen/blimdesign

User at Zhihu (知乎) with 4800+ followers and 6000+ favorites

- https://www.zhihu.com/people/horychen

PUBLICATIONS

Part I: Parameter Estimation and Sensorless Control

1. **J. Chen** and J. Huang, “Alternative Solution Regarding Problems of Adaptive Observer Compensating Parameters Uncertainties for Sensorless Induction Motor Drives”, IEEE Transactions on Industrial Electronics, doi: 10.1109/TIE.2019.2947862. **(IF： 7.5)**

2. **J. Chen** and J. Huang, "Globally Stable Speed-Adaptive Observer with Auxiliary States for Sensorless Induction Motor Drives",
IEEE Transactions on Power Electronics, vol. 34, no. 1, Jan 2019. **(IF: 7.2)**
3. **J. Chen**, J. Huang and Y. Sun, "Resistances and Speed Estimation in Sensorless Induction Motor Drives Using a Model with Known Regressors",
IEEE Transactions on Industrial Electronics, vol. 66, no. 4, April 2019. (**IF: 7.5)**
4. **J. Chen** and J. Huang, "Application of Adaptive Observer to Sensorless Induction Motor Via Parameter-dependent Transformation",
IEEE Transactions on Control Systems Technology, vol. 27, no. 6, pp. 2630-2637, Sept 2019. **(IF: 4.9)**
5. **J. Chen** and J. Huang, "Stable Simultaneous Stator and Rotor Resistances Identification for Speed Sensorless Induction Motor Drives: Review and New Results",
IEEE Transactions on Power Electronics, vol. 33, no. 10, pp. 8695-8709, Oct 2018. **(IF: 7.2)**
6. **J. Chen** and J. Huang, "Online Decoupled Stator and Rotor Resistances Adaptation for Speed Sensorless Induction Motor Drives by a Time-division Approach",
IEEE Transactions on Power Electronics, vol. 32, no. 6, pp. 4587-4599, June 2017. **(IF: 7.2)**
7. **J. Chen**, J. Huang, and M. Ye, "Totally Adaptive Observer for Speed Sensorless Induction Motor Drives: Simply a Cost of Extra Energy Consumption",
in Proc. of 2017 IEEE International Electric Machines and Drives Conference (IEMDC), May 2017, Miami, FL, USA.
8. L. Zhao, J. Huang, **J. Chen**, and M. Ye, "A Parallel Speed and Rotor Time Constant Identification Scheme for Indirect Field Oriented Induction Motor Drives",
IEEE Transactions on Power Electronics, vol. 31, no. 9, pp. 6494-6503, Sept 2016. **(IF: 7.2)**

Part II: Beairngless Motor

9. **J. Chen** and E. L. Severson, "Optimal Design of the Bearingless Induction Motor for Industrial Applications,"
in Proc. of IEEE Energy Conversion Congress and Exposition (ECCE), September 2019, Baltimore, MD, USA.
10. **J. Chen**, A. Farhan, M. Johnson, and E. L. Severson, "Design of Bearingless Permanent Magnet Motors Using No Voltage Combined Windings,"
in Proc. of The 10th International Conference on Power Electronics, Machines and Drives, April 2020, Nottingham, United Kingdom.
11. **J. Chen** and E. L. Severson, "Design and modeling of the bearingless induction motor",
in Proc. of 2019 IEEE International Electric Machines and Drives Conference (IEMDC), May 2019, San Diego, CA, USA.
12. **J. Chen**, J. Zhu, and E. L. Severson, "Review of Bearingless Motor Technology for Significant Power Applications",
IEEE Transactions on Industrial Applications, doi: 10.1109/TIA.2019.2963381. **(IF: 3.3)**

Others (PM Motor, Multi-phase Machine, Accelerated Calculation)

13. T. Wang, J. Huang, M. Ye, **J. Chen**, W. Kong, M. Kang, and M. Yu, "An EMF Observer for PMSM Sensorless Drives Adaptive to Stator Resistance and Rotor Flux-Linkage",
IEEE Journal of Emerging and Selected Topics in Power Electronics, vol. 7, no. 3, pp. 1899-1913, Sept. 2019.
14. T. Wang, J. Huang, B. Lin, M. Kang, **J. Chen**, and W. Kong, "Eccentricity detection of a six-phase induction motor with HFI",
IET Electric Power Applications, 2019, 13, (11), pp. 1717-1725, doi: 10.1049/iet-epa.2018.5733.
15. C. Di, I. Petrov, J. Pyrhönen and **J. Chen**, "Accelerating the Time-Stepping Finite-Element Analysis of Induction Machines in Transient-Magnetic Solutions",
IEEE Access, doi: 10.1109/ACCESS.2019.2938269.