

MICHAEL R. KLEINIGGER

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http://www.nlvocables.com/blog/?page_id=64

EDUCATION

Master's of Science, Rensselaer Polytechnic Institute, August 2010

- Completed Master's of Science degree in Electrical Engineering (3.52 GPA).
- Received a research assistantship including full tuition and stipend.

Bachelors of Science, Rensselaer Polytechnic Institute, May 2009

- Dual major in Electrical and Mechanical Engineering, with an Economics Minor (3.99 GPA)
- Received the Rensselaer Medal, President's Award, and the 2007 Founders Award of Excellence.

PROFESSIONAL EXPERIENCE

John Deere Power Systems, Various Locations

Dec. 2010 – Present

Engine Controls Applications Engineer

- Verified the design and implementation of engine controller software supplied with Yanmar Tier 4 diesel engines for use in utility tractors, commercial mowers, and construction equipment.
- Led routine international teleconferences between Yanmar and Deere electronics teams to discuss engine software implementation, testing, and delivery schedules.
- Hosted regular internal meetings with software and electrical team leads from sites in Georgia, Iowa, and North Carolina, to share knowledge and promote a common vehicle-engine interface.
- Worked closely with representatives from Yanmar America and Yanmar Japan to test and troubleshoot vehicle and engine software and electrical systems.
- Responsible for the design, development, and implementation of complex new engine control software to provide improved performance and functionality for Deere engines and controllers.
- Developed software tools in LabVIEW, MATLAB, Visual Basic, and Visual C++ .NET to support internal diagnostics and engine troubleshooting using CAN and J1939.
- Created a compact new hardware tool for ultra-low-cost generation of cam and crank signals; this has allowed dozens of engineers to quickly and more thoroughly test their software before release.
- Consistently received the highest possible performance ratings every year since starting.

RPI Center for Automation Technologies and Systems, Troy, NY

Jan. 2008 – Aug. 2010

Research Assistant

- Completed construction on a complex test stand for dynamic fuel cell testing.
- Developed a 6-DOF laser tracking system with demonstrated sub-millimeter accuracies.
- Implemented and developed test protocols for an automated construction system.
- Utilized a four-axis Adept robot and a six-axis Stäubli robot for sensor testing and demonstration.
- Created VAL3 robot control programs including force sensing and on-the-fly position alterations.
- Programmed Atmel AVR microcontrollers, multi-core XMOS microprocessors, and Xilinx FPGAs
- Performed patent searches, investigated competing products, prepared journal papers.

RPI Electrical Engineering Department, Troy, NY

May 2009 – Dec. 2009

Teaching Assistant, Electronic Circuits

- Responsible for lab activities and the development of classroom demonstrations and presentations.
- Developed LabVIEW-based software for the RPI IO Board to be used by students.

Rensselaer Polytechnic Institute Mechatronics Lab, Troy, NY

Jan. 2006 – Dec. 2007

Research & Teaching Assistant

- Responsible for design, modeling, simulation, and control of various Mechatronics systems.
- Developed and implemented control systems using LabVIEW and Atmel AVR microcontrollers.

Monsanto, St. Louis, MO

May 2007 – Aug. 2007

Automation Technologies Intern

- Designed and constructed a prototype autonomous robot for transporting plants in greenhouses.
- Analyzed a land-based imaging system and recommended improvements.

PUBLICATIONS

- M. R. Kleinigler and S.J. Rock. “Application of 6-DOF Sensing for Robotic Disturbance Compensation,” in the *6th Annual IEEE Conference on Automation Science and Engineering*, 2010.

PROFESSIONAL CERTIFICATIONS

- Certified LabVIEW Associate Developer (April 21, 2010)
- CompTIA A+ Certified Professional (August 13, 2003)

SOFTWARE/PROGRAMMING EXPERIENCE

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|--------------------------------|-------------------------------------|
| ➤ NI LabVIEW 7.1 – 2012 | ➤ SolidWorks 2005 – 2010 |
| ➤ MATLAB 2006a – 2011b | ➤ Microsoft Office 2003, 2007 |
| ➤ Atmel AVR Studio 4, 5 | ➤ Microsoft Visual Studio .NET 2005 |
| ➤ XMOS Development Environment | ➤ Experienced with C, C++, VB6 |
| ➤ Xilinx ISE 9.2 | ➤ Stäubli Robotics VAL3 |
| ➤ AVR and MSP microcontrollers | ➤ Familiar with Java, XC, ASM |

EXTRACURRICULAR ACTIVITIES

- Former member of the RPI Formula Hybrid racing team’s electrical group. Designed circuit boards and assemblies for driver interface as well as battery monitoring and charge control. Began development of a custom regenerative motor controller.
- Designed and built a 150W solar-powered uninterruptible power supply for personal use.
- Programmed a home automation system using ZWave, LabVIEW, and custom hardware. This system included web-based control and monitoring features.
- Please see my website at <http://www.nlvocables.com/blog/> for more details on my projects.