

KLAUS OKKELBERG

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US Citizen

OBJECTIVE

Ph.D. student in electrical engineering seeking a challenging engineering internship for summer 2015 in any US location

EDUCATION

- Georgia Institute of Technology**, Atlanta, GA 2014–Present
Ph.D. in Electrical and Computer Engineering (Engineering program ranked 4th in US)
Emphasis in Systems/Controls and Telecommunications
- University of New Orleans**, New Orleans, LA 2011–2014
M.S.E. in Electrical Engineering
Thesis on nonlinear filtering for battery health management
GPA: 4.0/4.0
- The Pennsylvania State University**, University Park, PA 2007–2011
B.S. in Electrical Engineering (Engineering program ranked 15th in US)
Schreyer Honors College Scholar (Representing the top 1% of Penn State students)
Honors Thesis on nonlinear control system for nuclear magnetic spectroscopy
GPA: 3.8/4.0

EXPERIENCE

- Xilinx, Inc.**, San Jose, CA (Designer of programmable logic devices)
Intern June 2014 – Aug. 2014
- Improved computer mathematical modeling of physical field-programmable gate array (FPGA) devices through Cadence modeling and Matlab/Verilog simulation
 - Increased accuracy of model to physical result by 20%
 - Improved performance by a factor of 15 in speed
 - Developed theoretical model of switching noise magnitude
 - Added unattended simulation functionality
 - Active in intern activities and participated in organic farming
- University of New Orleans**, New Orleans, LA
Research Assistant under Dr. Huimin Chen July 2012 – May 2014
- Studied accuracy and speed of various nonlinear filters as related to estimating battery state of charge
 - Proposed adjustments to the Unscented Kalman Filter and the Cubature Kalman Filter that increase filtering stability and accuracy
 - NASA-funded Masters through Ames Research Center Scholarship
- Pennsylvania State University**, University Park, PA
Research Assistant under Dr. Jeffrey L. Schiano March 2010 – May 2011
- Researched a marginal oscillator with a nonlinear feedback element for use in nuclear magnetic spectroscopy
 - Studied sampled-data implementation in presence of thermal noise
 - Derived sensitivity of a Robinson marginal oscillator
 - Optimized performance of simulation model by a factor of 100 in speed

PROJECTS

- Adaptive observer for optimal impulse discharge of a battery
- Video jitter removal using point feature matching and phase correlation
- Image reconstruction from incomplete, quantized measurements using discretized solution of Euler-Lagrange equation
- Investigation of resonant tunneling through a double-barrier diode
- Quantum interference visibility in an oscillating macroscopic mirror
- High-speed adaptive decision feedback equalization for SerDes communications
- Digital clock with laser display system for Senior Design Project

PUBLICATIONS

- “Comparison of Nonlinear Filtering Methods for Battery State of Charge Estimation” University of New Orleans, 2014.
- “Conversion Gain and Sensitivity in Marginal Oscillators: Continuous and Sampled-Data Negative Resistance Converters” The Pennsylvania State University, 2011.
- “The Pulsar: A Revolution in Display Technology” Pennsylvania Center for the Book, Penn State University, 2010.
- “Domino Tilings of Rectangles with Fixed Width” Journal of the Pennsylvania Governor’s School for the Sciences, 2007.

NOTES

Applications: Matlab/Simulink, PSPICE, Multisim, Mathematica, AutoCAD, Solidworks, Minitab, Photoshop, and MS Office

Programming: Matlab, Fortran, C, Java, Python, Visual Basic, Perl, Tcl/Tk, LabView, and LaTeX

Social Skills: Good communication skills, strong problem solving ability, and excellent at teamwork

Volunteering: Shell Eco-Marathon, Shell Oil/Viva Technology competition mentor for underprivileged students in New Orleans, Bike Around the Bay, Penn State philanthropy for children with cancer, and Penn State campus beautification

Interests: Cooking, swimming, ping pong, running, chess, and photography