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
Emphasis in Systems/Controls and Telecommunications

University of New Orleans, New Orleans, LA — 2011–2014
M.S.E. in Electrical Engineering
Thesis topic: 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
Schreyer Honors College Scholar (Representing the top 1% of Penn State students)
Honors Thesis topic: 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

- Detection of battery short circuit using high-gain adaptive observer
- Video jitter removal using point feature matching and phase correlation
- Image reconstruction from incomplete, quantized measurements using discretized solution of Euler-Lagrange equation
- Estimation of vehicular dynamics through nonlinear filtering of 3 parameters, 7 variables, and 2 inputs
- 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

Software: 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