Keith Stegath

Citizenship : US

Contact

3522 NW 23rd PL, Gainesville, FL 32605
Tel : 352-271-8563
e-mail : kstegath@gmail.com

Key Skills

Proficient or familiar with an array of programming languages, concepts, technologies, and applications, including:

C++, C, Lisp, Prolog, Assembly (ATMega, HC11) MatLab, Mathematica, PSpice, Altium DXP	FEA (Ansys, Abacus, Cosmos), Pro-Engineer SolidWorks, CAM	Certified Automobile Technician, Experienced MIG, TIG & oxy-acetylene welding	Analog and digital circuit design Hardware & PCB design, ARM and Atmel processor

Education

M. S. in Mechanical Engineering - *University of Florida, Gainesville, FL – 2007*
Research included nonlinear controls, robotics, and artificial intelligence. Cumulative UF GPA: 3.44

B. S. in Electrical Engineering - *University of Florida, Gainesville, FL – 2005*
Areas of specialization included robotics, microprocessors, and digital and analog circuits

A. A. - Santa *Fe College, Gainesville, FL – 2002*
Areas of specialization included engineering and mathematics

A. S. – *Ferris State University, Big Rapids, MI – 1978*
Areas of specialization included Automobile Technology and Repair; Performance Engine Machining (received a certificate)

Work Experience

Advanced Electric Vehicles, LLC *2008-Current*
Gainesville, FL

Engineer – Electric Vehicle Engineering & Design

- Design and construction of electrical and mechanical components needed for electric vehicle conversion
- Convert sports cars to electric power

Robotic Solutions, *Gainesville, FL* *2007-2008*

Engineer – Robotic Engineering, Consulting, & Design

- Design and construction of whale disentanglement robot for the International Fund for Animal Welfare

Stegath Coachcraft*, Lansing, MI* *1993-2000*

Owner – Classic Automobile Restorations

- Responsible for all phases of business
- Complete, electrical, structural, interior, and exterior restoration

Applicon CAD/CAM*, Ann Arbor, MI* *1987-1993*

Senior Software Application Engineer

- Technical support for CAD/CAM and CAE software to in-house Application Engineers and clients
- Taught clients and support staff FEA, Solids modeling, Mechanical Simulation

Troy Design*, Troy MI* *1986-1987*

CAD/CAM Coordinator

- Develop procedure for generating CNC machine tool paths using Applicon Solids Model CAD database
- Implement method to directly transfer CAD generated tool path to CNC machine tool

Manufacturing Data Systems Inc.*, Ann Arbor, MI* *1980-1986*

Application and Product Engineer

- Technical support for clients using computer aided machine tool programming
- Team member for design and development of PC-based 2D CAD and CAM software

Electro Arc Mfg.*, Ann Arbor, MI* *1979-1980*

Machinist

- Setup and operation of mills and lathes
- Senior programmer and operator of CNC mill (manual programming)
- Introduced to computer aided CNC programming

Jasper Auto Parts & Machine*, Cicero, IL* *1978-1979*

Machinist

- Crankshaft grinding, cylinder boring, cylinder head reconditioning, engine disassembly

Long Chevrolet*, Chicago, IL* *1978*

Automobile Mechanic

- Licensed for transmission, differential, engine rebuilding, brakes, suspension, tune-up

Teaching Experience

University of Florida, Gainesville, FL

Teaching Assistant for the *Controls Design Lab*; Supervised laboratory experiments and graded weekly lab practicum and assignments for three classes

Manufacturing Data Systems Inc., Ann Arbor, MI

Instructor to clients for computer aided machine tool programming

Applicon CAD/CAM, Ann Arbor, MI

Instructor to staff and clients for Solids modeling, finite element analysis, mechanical simulation, wireframe modeling, and ADAMS; Developed course materials

Writing

Two novels – "*Birth of a Warrior*", "*Secrets*"
Genre: Science fiction techno-thriller

Six short stories
Genre: Science Fiction

Worked with a published author

Master of Science Thesis – *Non-isometric Neuromuscular Electrical Stimulation via Non-model Based Nonlinear Control Methods*

Publications & Awards

K. Stegath, N. Sharma, C.M. Gregory, and W. E. Dixon, "An Extremum Seeking Method for Non-isometric Neuromuscular Electrical Stimulation," in *IEEE International Conference on Systems, Man and Cybernetics*, 2007.

C. M. Gregory, S. Bickel, **K. Stegath**, and W. E. Dixon, "The Impact of Varying Stimulation Intensity and Contraction Type on the Force-frequency Relationship in Human Skeletal Muscle During NMES," *American Physical Therapy Association, Combined Sections Meeting*, 2008.

K. Stegath, N. Sharma, C.M. Gregory, and W. E. Dixon, "Nonlinear Tracking Control of a Human Limb via Neuromuscular Electrical Stimulation," *American Control Conference*, 2009, pp 1941 – 1946.

N. Sharma, **K. Stegath**, C.M. Gregory, and W. E. Dixon, "Nonlinear Neuromuscular Electrical Stimulation Tracking Control of a Human Limb," *IEEE Transactions on Neural Systems and Rehabilitation Engineering*, 2009, pp 576-584.

K. Stegath, N. Sharma, C.M. Gregory, and W. E. Dixon, "Experimental Demonstration of RISE-Based NMES of Human Quadriceps Muscle," *IEEE-NIH Life Science Systems & Applications Workshop, 2007*, pp 43 – 46.

Best Paper, **O. Hugo Schuck Award**, "Nonlinear Tracking Control of a Human Limb via Neuromuscular Electrical Stimulation," *American Control Conference*, Seattle, WA, 2009, pp. 1941-1946.

National Science Foundation Award (NSF), *Research Experience for Undergraduates* (REU), *2004.*

Responsibilities & Experience

Small Business Ownership

- Interacted with clients & suppliers
- Marketed and promoted company
- Responsible for company's image
- Hiring of co-workers
- Project leader and supervisor
- Responsible for accounting and finance

Teaching Assistant

- Supervised, instructed, assisted, and graded students on their performance

Thesis

- Interdisciplinary research & collaboration in mechanical and electrical engineering, and human physiology
- Conversion of analog device to digital control
- Developed experimental equipment and procedures for human experimentation
- Determine and implement laboratory requirements

Novel & Short Story Writing

- Vastly improved writing skills

NSF Award

- Responsible for project design and independent research
- Required weekly presentations and progress reports
- Deadline constraint on project completion
- Designed 3D infrared sensor for 5-DOF robotic arm

Mechanic & Machinist

- Creative and extensive use of MIG, TIG, oxy-acetylene welding as well as hand tools and machine tools

Laboratory Setup, Supervising & Mentoring

- Mentored international students
- Determined requirements for a new laboratory
- Directed and supervised the hardware upgrade of a wheeled, mobile research robot

Teaching Computer Courses

- Client interaction & writing course materials