Donald F. Hanson, PhD, PE

P. O. Box 44579
Eden Prairie, MN 55344

(952) 906-3492
dfhanson@ieee.org

ELECTRICAL ENGINEER (PE): DESIGNER, RESEARCHER, INSTRUCTOR, AND CONSULTANT.

1. Building Systems Integration Engineer
2. Radio Frequency, Microwave, and Communications Engineer
3. Research and Development Engineer
4. Video, Display, and Television Engineer
5. Digital and Microprocessor Systems Engineer

SKILLS AND PROFICIENCIES:

* Design/Install of intelligent and green building components, including solar PV systems
* Electrical/Electronics Design
* Instructor and speaker
* Troubleshooting
* Interfacing and System Integration
* System and Product Researcher
* Modeling, data analysis, and computer simulations

LICENSES/SOLAR PV Training:

* Licensed Professional Engineer (PE) in Minnesota
* NABCEP trained in solar PV design and installation (NABCEP is the North American Board of Certified Energy Practitioners). Presently possess NABCEP Certificate of Knowledge (COK). Actively pursuing full NABCEP Solar PV Certification.
* Licensed Power Limited Technician. Actively pursuing Master Electrician License.

DESIGN ENGINEER:

* Certified CEDIA designer (CEDIA is Custom Electronics Design and Installation Association).
* Designed original equipment for new microcomputer laboratory
* Designed microprocessor control of Parabolic Dish Antenna for Client Company
* Designed video/modulation and digital circuits for color graphics workstation (MS Thesis)
* RF and Microwave Engineer specializing in Network Analyzer Measurements from DC to 50 GHz
* Designed, Simulated, Fabricated and Measured Slot Antennas fed by Coplanar Waveguide
* Designed portions of pMOS digital integrated circuit for General Electric's Electronics Laboratory

RESEARCH & DEVELOPMENT ENGINEER:

* Received grants from US Air Force, US Army, and University.
* Mathematical Research in Electromagnetics using Singularities and Distribution Theory (PhD Thesis)
* Development of Numerical Analysis for slot antennas, Singularities, and Coplanar Waveguide
* Analyzed and Programmed Mathematical Functions using Chebyshev Polynomials.
* Wrote Moment Method Numerical Methods for Numerical Solution of Electromagnetics, Microwave, and Antenna Problems
* Reverse Engineered the 6502 Microprocessor and Auxiliary Chips directly from the Blueprints
* Research Fellow in Numerical Methods in Electromagnetics for US Air Force

* Research Fellow in VHDL (VHSIC Hardware Description Language) for US Army where VHSIC is Very High Speed Integrated Circuits
* US Army Technical Staff on Government/Industry team developing MHDL (MIMIC Hardware Description Language) where MIMIC is MIcrowave/Millimeter-wave Integrated Circuits.
* Developed Original Hardware Description Language for nMOS/pMOS digital integrated circuits
* Developed VHDL model for Dynamic Latches used in Microprocessor Design

AUTHOR/TECHNICAL WRITER:

* Wrote book Chapter on Microwave resonators and dielectric resonator applications.
* Researching a book on Introduction to Engineering based on System Dynamics Principles.
* Proposal Writer of Grant Funding Proposals to both Government and Private Groups

CONSULTANT

* Expert witness on Television Receive only earth stations

COLLEGE PROFESSOR/MENTOR:

* Taught graduate and undergraduate courses in Electrical Engineering and Computer Engineering at Iowa State, Mississippi, Minnesota, Syracuse, and Illinois
* Created new electronics and microprocessor Laboratories at Mississippi
* Short course lecturer in Electromagnetics as applied to cylinders, slots and resonators.
* Managed Students for Senior Design projects in Electronics, microprocessors, microcontrollers and antennas
* Supervisor for graduate students in Electromagnetic Fields, Microwave Circuits, and Numerical Methods
* Taught and Supervised students in the Radio Frequency Laboratory
* Taught Supercomputer FORTRAN programming and architecture

EDUCATION

Ph.D. in Electrical Engineering (Electromagnetic Field Theory)
University of Illinois, Urbana-Champaign, IL.

M.S. in Electrical Engineering (Video, Analog and Digital Electronics)
University of Illinois, Urbana-Champaign, IL.

B.S. in Electrical Engineering (Compiler Development, Computer Language Design)
University of Illinois, Urbana-Champaign, IL.

WORK HISTORY

Professor at the following Universities:

* University of Mississippi * Syracuse University
* Iowa State University * University of Minnesota
* Norwegian University of Science and Technology (NTNU)