

Nicholas R. Gamroth

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Work History

Antenna Systems/Software Engineer

2004 - Present

United States Air Force :: Air Force Research Laboratory

Hanscom AFB, MA

Responsible for researching digital signal processing and software aspects of antenna systems. Also responsible for managing research and development contracts totalling \$1.2M. Commissioned as an Air Force officer in July of 2004.

- Designed and implemented non-linear signal processing system to improve amplifier linearity
- Created n-tier database solution for laboratory inventory, including web and client interfaces
- Wrote software tools to control in-house electromagnetic characterization apparatus
- Co-inventor (pending), Fully Automated Free-Space Material Characterization and Far Field Antenna Analysis System
- Created PC-based arbitrary waveform generator for digital beamforming signal generation
- Wrote software applications and programming library to automate measurements of RF components
- Presented multiple technical topics to senior branch members, authored technical articles for in-house use

Computer Visualization Researcher

2000 - 2003

University of Wisconsin :: eMedia Center

Madison, WI

Researched computer visualization in University facility. Assisted customers in becoming familiar with software and equipment. Integrated software packages and new hardware into the facility.

- Created software driver to interface Spaceball input device with legacy software packages
- Wrote software to control stereographic, dual-projector display

Education

University of Wisconsin

Madison, WI

B.S., Electrical Engineering

Relevant Skills

Languages: C#, Java, C/C++, SQL, PHP, Perl, UML, Matlab, VHDL, \LaTeX , Ruby on Rails

Platforms: Windows, Mac OS X, HP-UX, Linux, TI C6x, Altera Stratix, Xilinx Virtex-4

APIs: Tao Framework, PortAudio, Mac OSX AudioUnits, Synthesis ToolKit, OpenGL, Java3D

Personal Achievements

- Designed and implemented a soft core processor using VHDL on an Altera Stratix-II
- Implemented Visual Studio code documentation application using a plug-in architecture to export various document formats, including PDF and HTML
- Designed and implemented various audio effects using TI C6x DSP and Mac OS X AudioUnits