Greg Freeman

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Skills

- Scientific software development: Python, C++, MATLAB, JavaScript, C, Obj C, C#, Java, Ruby, latex, automation, code generation, Linux, Windows, OS X, cluster, embedded, IOT, FPGA.
- Data science: optimization, machine learning, image processing, signal processing, visualization.

Experience

Applied Materials Austin, TX 2012-present

- Robotics Engineer: design robot control systems for industrial vacuum robots used in semiconductor manufacturing and analyze system real-time data.
- Diverse problem solver: motion control, path planning, model fitting, machine learning based system identification, data analysis tools, sensor processing and calibration.
- Automated code generation using python, MATLAB and C++ supporting model-based control.
- Optimization-based trajectory generation using python, sympy, MATLAB and C++.
- Integrated python tools with legacy C++ code base for data post processing, interactive scripting and automated test. Combined agile python development with robust proven system architecture.

University of Texas Austin, TX 2010-2012

- Research Assistant: advancing the state of the art in compressive sensing, a mathematically efficient method to collect images and other signals in a pre-compressed form.
- Improving reconstruction optimization algorithms with a goal of better image quality.

DRS Unmanned Technology Austin, TX 2006-2010

- Various roles: Unmanned vehicle software development including auto-pilot, ground control, analysis tools, test equipment and simulation models. HW/SW integration leader.
- Development of Neptune and Sentry fixed-wing aircraft, Skybus airship, payloads.
- Solved complex system problems with flight data analysis and data visualization.

Austin Info Systems (Overwatch Systems) Austin, TX 2004-2005

- Systems engineer: developed software for military applications including intelligence database analysis, mapping, graph network visualization and other information technology.

United States Air Force, Commissioned Officer, Developmental Electrical Engineer 1999-2004

Unmanned Aerial Vehicle (UAV) Battlelab, USAF Eglin AFB, FL 2002-2004

- Technical adviser for unit tasked to foster innovation in the UAV community.
- Networking UAV systems, GPS-guided micro-air-vehicle, battlefield communication collaboration, compression technologies, electronic warfare.

Air Force Research Labs, Airborne Laser Kirtland AFB, NM 2001-2002

- Adaptive optics technologies for laser weapons, automated data analysis and retrieval, tracking and pointing control.

Test and Evaluation Squadron Kirtland AFB, NM 1999-2001

- Modeling, simulation and testing of radar systems, team lead for multiple projects.
- Predator unmanned aerial system testing and evaluation: geospatial processing and image quality.

Education

Post Graduate Study **University of Texas** 2008-2015

- Compressive sensing, optimization, statistical models of natural images, machine learning, image processing, MRI imaging, model-driven development, automatic code generation, visualization.

MS Computer Engineering **University of Texas** 2005-2008

- GPA 3.9, study in machine learning, signal processing, radar, computer vision.

MBA General Business **University of New Mexico** 2000-2002

- GPA 3.8, study in finance, intellectual property and e-commerce.

BS Electrical Engineering **United States Air Force Academy** 1995-1999

- GPA 3.5, dean's list, math minor, digital electronics concentration.