Graham A. Johnson

FUSING SCIENCES, ENGINEERING, DATA VISUALIZATION, & EXPLORATION

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WORK EXPERIENCE

The Aerospace Corporation – El Segundo, CA

Sr. Member of Technical Staff
March 2017 – Present

Senior member of the Advanced Visualization & Mobile Development section, within the Visualization & Immersive Technologies Dept. Actively supported corporate innovation efforts to integrate emerging technologies across the enterprise. Collaborated on a highly-skilled & multidisciplinary team to spearhead project designs, developments, and deployments of numerous interactive & high-performance data visualization applications across platforms (e.g. responsive web & mobile, AR/VR wearables). Effectively managed concurrent projects ranging from rapid prototyping efforts to full-scale production. Facilitated customer-centric workflows with data-driven concepts to deliver intuitive products that provide comprehension of complex systems. Engagingly presented briefings to technical fellows, customers, & corporate executives throughout project life-cycles.

Lab for Multiscale Processes – Purdue Univ.

Graduate Research Assistant
May 2011 – May 2016

Led by Distinguished Professor John H. Cushman on collaborative and individual projects crossing the boundaries of applied mathematics, multi-scale modeling, and computational sciences. Projects blended theoretical structures with computational schemes & made use of techniques from subjects of: nonlinear dynamical systems, numerical methods & model design, random sampling, novel stochastic processes, experimental data analysis, estimation, statistical evaluation, & uncertainty quantification. Thesis research involved novel multi-scale swelling porous media simulations, employing high-fidelity modeling with continuum & statistical mechanics, methods in partial differential equations, finite-element methods, & adaptive mesh refinement.

Department of Mathematics – Purdue Univ.

Graduate Student Instructor
August 2011 – May 2016

Continually progressed as a graduate instructor in the Mathematics Department. Assigned half-time semesterly teaching positions, & regularly lectured multiple sections of the assigned course. Developed effective learning materials, delivered fresh & engaging lessons, & designed fair examination questions. Managed grades ethically & provided frequent feedback. Received exceptional instructor evaluations from students & faculty.

ATK Space Systems – Promontory, UT

Analyst, Loads & Environments
May 2012 – August 2012

Internship within the Loads & Environments Group. Designed custom FIR filters for rocket engine test data, analyzed Monte-Carlo simulations for Thrust Vector Control experiments, & calculated statistical metrics to aid in future design considerations. Observed full-scale experimental design & testing in specialized laboratories.

EDUCATION

2013 – 2016 **M.S. Applied Mathematics**
GPA 3.54/4.0
Purdue University

2011– 2012 **M.S. Aero/Astro Engineering**
GPA 4.0/4.0
Purdue University

2007 – 2011 **B.S. Aero/Astro Engineering**
GPA 3.44/4.0
Purdue University

TECHNICAL SKILLS

THEORY	Data Analysis, Data Visualization, Machine Learning, Probability & Statistics, Dynamical Systems, Multiscale Modeling & Stochastic Processes
LANGUAGES	Python, MATLAB/Octave, JavaScript, HTML, CSS, C, C#, Processing, R, LaTeX
FRAMEWORKS	Node.js, D3, Angular6, React, Git, Mercurial, MongoDB, Unity Game Engine, Adobe After Effects, Microsoft Office, Unix, Linux, MacOS, Windows

PROFESSIONAL SKILLS

- Effective Communication & Active Listening Styles
- Presenting Effective Briefings Across Disciplines
- Strong Attention to Details & Big Picture Impact
- Project Leadership, Team Management, & Customer Interactions. Agile & Waterfall Approaches

ACCOMPLISHMENTS & AWARDS

- Briefed The Aerospace Corporation Board of Trustees, & The Secretary of Air Force
- Completed Columbia University Online Course Machine Learning - Fall 2018
- Coauthored Peer-Reviewed Articles in *Journal of Statistical Mechanics: Theory & Experiment, & Geophysical Research Letters*
- International Society of Porous Media Conference Research Presenter
- Excellence in Graduate Teaching Award, Purdue Dept. of Mathematics

PERSONAL INTERESTS

- Data Visualization & Interactive Storytelling, Complex Multi-Scale Systems, Renewable Energy, Biological & Agro-Ecosystems, Neuroscience, Space Sciences, & Multidisciplinary Problems.
- Rock Climbing, Trail Running, Wilderness Backpacking, Fly-Fishing, Mountain Biking, Nutritional Cooking, Artisanal Bread Baking, Fermentation, Regenerative Agriculture