

Kristopher J. Overholt

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Summary of Qualifications

10+ years of experience working with data science and data analysis with Python and R.
7+ years of academic and industry teaching experience with data science and engineering coursework.
Applying Python and R to engineering problems, data analysis, and computational models.
Administration of on-premises and cloud-based Linux systems for scientific and parallel computing.

Education

Ph.D. in Civil Engineering, The University of Texas at Austin, 2013
M.S. in Fire Protection Engineering, Worcester Polytechnic Institute, 2010
B.S. in Fire Protection Engineering Technology, University of Houston–Downtown, 2008

Certifications

Pragmatic Marketing Certified - Level III (PMC-III) - November 2017
Texas Board of Professional Engineers Certified EIT #40629 - September 2008

Employment and Research Experience

Senior Product Manager / Software Engineer February 2015–Present
Anaconda, Inc. *Austin, TX*

Working with customers and users to understand market problems, then formulate and prioritize repeatable solutions in an enterprise data science platform with Python and R. Coordinating with product marketing team to create webinars, demonstrations, and sales collateral. Working with customers as a solution architect for cluster computing and data analysis/engineering/model workflows. Performing pre-sales activities with customers including product demonstrations and solution architecting. Managing cluster computing products that integrate Python with Hadoop and Spark. Developing tools/products to manage Python packages across bare-metal and cloud-based clusters.

Fire Protection Engineer May 2012–January 2015
National Institute of Standards and Technology *Gaithersburg, MD*

Performed fire model verification and validation work for the US Nuclear Regulatory Commission (NRC) related to empirical correlations and Fire Dynamics Simulator (FDS). Worked with the FDS development team on verification and validation, continuous integration testing, and quality metrics. Conducted fire modeling studies to provide insight on the fire development and thermal conditions during firefighter fatality and injury incidents. Conducted full-scale experimental work related to improving firefighter tactics and safety. Developed sensor-based smart firefighting technology.

Graduate Research Assistant January 2010–May 2013
The University of Texas at Austin *Austin, TX*

Research assistant on issues related to fire modeling, inverse fire modeling problems, fire suppression systems in nuclear gloveboxes, firefighter line of duty injuries/deaths, wildland fire experiments and modeling, and positive pressure ventilation experiments and simulations.

Graduate Student Researcher May 2011–August 2011
Southwest Research Institute *San Antonio, TX*

Performed data analysis on the project: Reducing Uncertainty of Quantifying the Burning Rate of Upholstered Furniture. Fire modeling and data analysis work for full-scale upholstered furniture fire experiments sponsored by the National Institute of Justice (NIJ). Developed fire model simulations and guidance for the forensic investigation of fire incidents involving upholstered furniture.

Adjunct Faculty August 2010–May 2011
University of Houston–Downtown *Houston, TX*

Instructor for fire protection engineering courses including Fire Dynamics, Fire Modeling, Structural Fire Safety, and Advanced Problems in Fire and Safety in the Fire Protection Engineering Technology program.

Research Assistant and Teaching Assistant August 2008–December 2009
Worcester Polytechnic Institute *Worcester, MA*

Teaching assistant to graduate level courses in the Department of Fire Protection Engineering. Research assistant in the fire science laboratory for small-scale commodity tests, including the cone calorimeter. Experimental determination of a mass transfer number to assess the flammability hazard and ranking of storage commodities for warehouse fire protection. The goal was to better classify and protect commodity storage in warehouse facilities and predict upward flame spread rates in warehouse fires.

Summer Undergraduate Research Fellowship May 2007–August 2007
National Institute of Standards and Technology *Gaithersburg, MD*

Performed fire model verification and validation study of intermediate-scale cable fire experiments conducted by the Nuclear Regulatory Commission (NRC) related to the Thermally-Induced Electrical Failure (THIEF) Model in Fire Dynamics Simulator (FDS). Contributed to the FDS User's Guide and Verification & Validation Guides.

Undergraduate Researcher August 2007–May 2008
University of Houston–Downtown *Houston, TX*

Performed fire model validation study for small-scale pool fire experiments. The measured mass loss rates of small-scale ethanol pools were compared to predicted mass loss rates using the FDS fuel droplet sub-model to simulate the burning of liquid fuels. Additional work was performed related to fire simulations of smoke spread, sprinkler activation, and structural integrity in large atriums.

Skills and Coursework

Python / NumPy / SciPy / pandas	R / Shiny / RStudio
Data Science Workflows	Predictive Model Development and Deployment
scikit-learn / Tensorflow	Visualization: matplotlib / seaborn / ggplot
Docker / Container-Based Workflows	Kubernetes Configuration and Administration
Hadoop Configuration and Administration	Hadoop / Spark / PySpark Data Analysis
Mac OS X / Linux / Windows	Cloud Infrastructure / AWS / GCP
DevOps, CI/CD, and Automation	Parallel and Clustering Technologies
Fortran / C++	Solution Architecting / Requirements Gathering
Django / Flask / WordPress	Data Analytics Platforms
Matlab	Small-Scale and Large-Scale Fire Experiments
LabVIEW	NIST Fire Dynamics Simulator
Scientific / Technical Copy Editing	CFAST / BRANZFIRE Zone Models
Scientific / High-Performance Computing	Performance-Based Design
Scientific Visualization & Data Analysis	Fire Dynamics
Instrumentation and Data Collection	Fire Alarm Signaling Systems
L ^A T _E X	Structural Design for Fire Safety
Computational Fluid Dynamics	Fire Safety and Hazard Recognition
Engineering Mechanics	Building Fire Safety
Heat Transfer	Automatic Fire Suppression
Combustion	Industrial Safety
Thermodynamics	Fire Modeling
Differential Equations	HVAC Design
Incompressible Flow	Indoor Air Quality: Transport and Control
Fluid Mechanics	Human Factors in Fire Safety
Numerical Methods	Human Exposure to Indoor Air Pollution

Teaching and Tutor Experience

Adjunct Faculty	August 2010–May 2011
Department of Engineering Technology, University of Houston–Downtown	
Courses: Fire Dynamics, Fire Modeling, Structural Fire Safety	
Teaching Assistant	January 2010–May 2010
Department of Mechanical Engineering, The University of Texas at Austin	
Courses: Heat Transfer Lab	
Teaching Assistant	August 2008–December 2009
Department of Fire Protection Engineering, Worcester Polytechnic Institute	
Courses: Fire Dynamics, Fire Protection Systems, Building Fire Safety	
Tutor and Lab Assistant	August 2007–May 2008
Department of Engineering Technology, University of Houston–Downtown	

Memberships

Member, Society of Fire Protection Engineers, 2004–2015
Member, National Fire Protection Association, 2014–2015
Member, International Association for Fire Safety Science, 2011–2015
President, SFPE UT Student Chapter, 2010–2012
President, SFPE WPI Student Chapter, 2009
Founding President, SFPE UHD Student Chapter, 2007

Honors and Awards

Jack Bono Award for Engineering Communications, Society of Fire Protection Engineers, 2017
Best Thesis Award “Excellence in Research”, International Association for Fire Safety Science, 2014
Harry C. Bigglestone Award for Excellence in Communication of Fire Protection Concepts, Fire Technology, National Fire Protection Association, 2013
Honorable Mention, NSF Graduate Research Fellowship, 2009 & 2010
2nd place, Combustion Art Competition, 6th U.S. National Combustion Meeting, 2009
Gerald M. Maatman Fellowship, Kemper Foundation; Fire Science Laboratory, WPI, 2009
Outstanding Graduate – Safety and Fire Engineering Technology, UHD, 2008
LS-AMP Outstanding Scholar Award – Highest GPA in Engineering Technology Dept., UHD, 2008
Brown Foundation Leadership Award – Scholars Academy, UHD, 2007 & 2008
Hat’s Off Award, Society of Fire Protection Engineers Annual Conference, 2007
Outstanding Student – Safety and Fire Engineering Technology, UHD, 2006 & 2007
Louis Stokes Alliance Minority Participation Scholarship, National Science Foundation, 2006
Red Rose Scholarship, UHD, 2006
Rookie of the Year, Klein Fire Department, 2002

Volunteerism

Webmaster, North Austin Civic Association; Austin, TX, 2010–2013
Orphanage work, Casa Hogar Douglas; Monterrey, Mexico, January 2007
Community Involvement Day; UHD, September 2006
Ed’s Bayou Cleanup; UHD, Spring 2006
Emergency Disaster Preplanning; Loving and Caring Arms Adult Care Facility, March 2006
Tactical Suppression Firefighter, Klein Fire Dept. Station 32; Houston, TX, 2002–2005
Fire alarm system upgrades, Sweetwater Christian School; Houston, TX, 2005