
KENNETH BLACK

Knoxville, TN • 865-249-2707 • blackenc@gmail.com

datablends.us/



Global Data, AI & Analytics Services (GDASS) at General Motors

Work Experience

Feb 2015 - Present

Senior Data Scientist in Advanced Analytics

General Motors

Ken is a data scientist with nearly four decades of advanced computational experience, including project work in data science, advanced analytics, and environmental science. Ken managed a data visualization team within GDASS for over two years before becoming a senior data scientist.

His work includes topics across the GM enterprise. Projects include autonomous vehicle applications, supply chain optimization, future vehicle planning, processing large quantities of vehicle data, developing new data products, vehicle problem identification and tracking, computing lease and finance payments, driving safety analysis, travel and expense analysis, cash flow analysis, supercruise analysis, real-world road signage analysis, and many other smaller projects.

Ken won the [GM Top Coder competition](#) at the GM IT Innovation Center in Roswell, GA, on August 16, 2017, and has also won several analytics competitions at GM. Ken is one of only three people worldwide awarded Tableau Zen Master and Alteryx ACE titles. Anyone can view Ken's project samples and recognitions by [clicking here](#).

Sep 2007 - Feb 2015

Programmer and Business Consultant

QualPro, Inc

Ken specialized in applying Multi-Variable Testing (MVT) to improve processes. He wrote the [QualPro, Inc](#) company software to compute the analysis of MVT experiments using [Plackett-Burman designs](#).

Ken's Qualpro project experience includes process improvement in telecommunications, manufacturing, education, retail, health care, and various other business and industrial applications.

Jun 1998 - Oct 2007

Department Manager and Sr Hydrogeologist

Jacobs Engineering

For six years, Ken was the Department Manager for [Jacobs Engineering](#) Environmental Modeling Center of Excellence in Oak Ridge, TN, where he performed project management and technical duties. Anyone can obtain a detailed listing of project experience by [clicking here](#).

Ken worked for a decade on groundwater remediation in Cape Cod, Massachusetts, using deterministic and stochastic groundwater flow and transport models. Ken established a modeling methodology for designing remediation systems and facilitating relationships with federal regulators. Ken performed site characterization studies, remedial investigations, and feasibility studies. These studies helped [design, monitor, and optimize numerous large-scale groundwater remediation systems](#).

He also worked on the [Comprehensive Everglades Restoration Program](#), including C++ computer code testing and review, developing XML data validation schemas, and developing benchmark examples.

May 1988 - Jun 1998 Hydrogeologist and Computer Programmer
Environmental Consulting Engineers

Ken worked as a quantitative hydrogeologist. He created site-specific conceptual models, scientific computer codes, graphical pre- and post-processors for numerical models, and innovative analysis methods.

Ken worked on contaminated groundwater sites at the three national laboratories in Oak Ridge, TN. Ken's project experiences included performing groundwater flow and transport modeling of radioactively contaminated sites. These models helped evaluate the clean-up effectiveness of remedial alternatives. Anyone can see Ken's project experience by [clicking here](#).

Education

Aug 1987 - May 1988 Post-Master's Studies
New Mexico Institute of Mining and Technology

Ken took additional post-Master's courses after completing a Master's Fellowship at Oak Ridge National Laboratory in 1987.

Aug 1985 - May 1987 Masters of Science
Southern Illinois University

Ken completed his Master's degree in Geology from SIU-C in 1988. His Master's thesis title was "A Microcomputer Groundwater Data Analysis Program". His transcripts are [available here](#).

Aug 1981 - May 1985 Bachelors Degree
Southern Illinois University

Ken completed his Bachelor's Degree in Geology from SIU-C in 1985. He achieved the status of University Honors upon graduation. His transcripts are [available here](#).

Skills

Tableau and Alteryx Software

Ken has used Tableau Desktop from 2008 to 2021 to analyze business and scientific data sets. Ken has used Alteryx from 2013 to 2021 to solve various business and science problems. He writes [a blog](#) for teaching others how to use Tableau and Alteryx for solving analytics and data science problems. Ken is a [Tableau Zen Master \(2019\)](#), a [Alteryx ACE \(2015-2021\)](#), and is [Alteryx advanced certified](#).

Database Computer Programming

In the early 2000s, Ken designed a remediation progress program called the History of Operations and Modeling Evaluations (HOME). While Ken provided the theory and mathematical foundations of the program, David Greenberg wrote the actual code. The HOME database has been in use at the Massachusetts Military Reservation (MMR) for many years to quantify the progress of groundwater remediation for various systems.

Math and Computer Sciences

Applied math and computer science have formed the foundation of Ken's 30+ year consulting career. Advanced math training included multiple levels of calculus, ODE's, PDE's, numerical calculus and analysis, numerical methods including finite-element and finite-difference methods. Other computer science techniques include Python, Fortran, C, C++, Java, Visual Basic, VBA, Pascal, HTML, XML, .Net, SQL, etc.

Web Site Development

Ken has developed and maintained dozens of websites through the years. For most sites, Ken programs directly in HTML to build and maintain the sites but will also use the following tools and techniques as needed: CSS, PHP, FTP, javascript, SQL, Dreamweaver, XML, Artisteer, Vedit, and Notepad++.

Fortran Computer Programming

Ken has written a vast number of Fortran codes between 1983 and 2007. Most of the programs were for numerical modeling applications, including graphical analysis modules, utilities, and pure computational code. Ken wrote a parallel processing version of the model 3d Femwater for use on the ORNL supercomputers in the late 1980s and early 1990s. In 2006, Ken wrote a dynamic memory allocation version of Femwater for the US Army Corps of Engineers. This code simulated a proposed lock and dam structure on the Mississippi River.

VBA Computer Programming

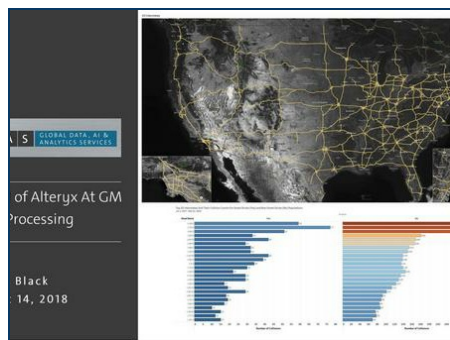
Ken has programmed in Basic, Visual Basic, VBA, and VB .net, between 1982 and 2020. Ken developed graphical post-processing codes for numerical models using VB. His most recent VBA program is over 25,000 lines and was written to compute the results of multi-variable tests (Plackett-Burmann designs). The User's manual for this code was created in LaTeX, which Ken has used extensively for publishing other scientific computer manuals.

C/C++ Computer Programming

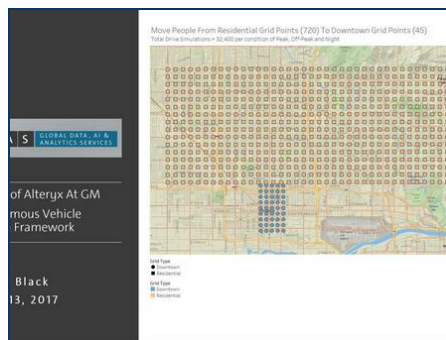
Ken has worked on teams that have used C and C++ since the mid-1990s. He has written hundreds of scientific codes for processing data, performing pre-processing and post-processing of numerical model results, and performing numerical model computations.

Portfolio

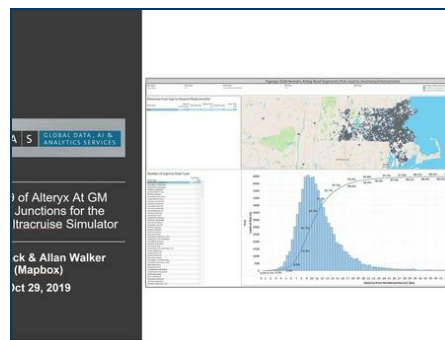
For more project examples, [click here](#) and look at the second section of this webpage.



Project Example #1



Project Example #2



Project Example #3

Publications and Technical Reports

Ken has directly authored or co-authored dozens of technical or scientific reports. The list of publications is available by [clicking here](#). Ken's most recent technical work is a decade-long [independent study of global warming](#).