

Capability Statement

Engineering Solutions

With its team of advanced software developers and subject matter experts, Bashpole Software, Inc. (Bashpole) has been providing innovative data solutions since its founding in 2006. We have grown exponentially over the past ten years developing products and services that range from anti-human trafficking software, database integration, and communication technologies, to non-profit marketing and sponsorship development opportunities for businesses.

Headquartered in North Webster, Indiana, we have attracted an expert team from across the United States, Brazil, and India. At Bashpole, we use cloud-based computing which enables ubiquitous, on-demand access to a shared pool of configurable computing resources. Our in-house server maintains data of US-wide residential contacts and worldwide business contacts.

The Bashpole team has diverse, yet complementary, qualifications. Our team's professional and educational disciplines include Computer Science, Biometrics, Web Design and Development, Physics, Engineering, Mathematics, Cognitive Science, English Literature, Marketing, and Business. These diverse qualifications offer our clients perspectives and contributions vital to the success of a fast-paced technology company.

Our leadership team is experienced in management and technology development with a workforce that includes those with many years of relevant industry experience and those who are on the cutting edge of the latest technologies. Team members are expert in their respective fields, which include deep and broad experience in management, consulting, analytics, and research and development in addition to technical fields that comprise programming, database, and systems administration. We believe that this combined corporate experience provides an advanced level of team and industry competence seldom found within a single company.

Core Competencies

At Bashpole, our experienced engineers and skilled technical experts have the vision and theoretical knowledge necessary to develop innovative solutions that are able to meet the most challenging requirements. In our work with government and private customers, the Bashpole team has been especially recognized for our ability to address extremely difficult requests and specifications under various physical constraints while still managing to integrate government technological research into the marketplace. Our software-based tools include:

Big Data and Machine Learning – KESTREL is a Visualization & Analytics Engine (VAE) developed by Bashpole that uses big-data analysis and machine learning to provide insights used to find, process, and validate contact data. This process is commonly called "fuzzy matching" and is the technique used to find data strings that match a pattern approximately (rather than exactly). Approximate string matching is typically divided into two sub-problems: finding approximate substring matches inside a given string and finding dictionary strings that match the pattern approximately, within various constraints.

Distributed Searching Solution – HAWK is a distributed search solution that combines Natural Language Processing (NLP) based data extraction with Elasticsearch, a Lucene-based distributed search server, to provide fast real-time search capabilities. It also utilizes search engines where there is no central server. Unlike traditional centralized search engines, work such as crawling, data mining, indexing, and query processing is distributed among several peers in a decentralized manner where there is no single point of control.

Identity Resolution & Human Intelligence Engine – EAGLE is a software package for gathering intelligence by means of interpersonal contact. The manner in which human information operations are conducted is dictated by both official protocols and the nature of the source of the information. Within the context of the U.S. military, most human information activity does not involve clandestine activities. Bashpole's software can provide several kinds of information such as observations during travel or other events from travelers, refugees, escaped friendly POWs, etc. We can also provide data on information for which the individual in question has specific knowledge or, in the case of defectors and spies, sensitive information to which they had access. Finally, we can provide information on interpersonal relationships and networks of interest.

Cloud Computing – OWL is our software deployment package, which uses cloud computing and provides us with ubiquitous, on-demand access to a shared pool of configurable computing resources. This allows our software to be rapidly provisioned and released with minimal management effort. The key difference between cloud computing and hosted computing resources is the dynamic and quickly expandable nature of cloud computing resources.

Predictive Analysis – OSPREY is a delivery system that leverages predictive analytics software to provide accurate situational awareness for the warfighter, first responder, and intelligence analyst. OSPREY is currently being used to combat human trafficking and, in the past, has been used for intelligent marketing for non-profit organizations. There is significant life-saving potential for this system by anticipating events before they occur, mitigating their impact, and/or preventing a disaster from occurring.

Image Processing Engine – FALCON is an IPE that utilizes deep learning to perform various forms of biometrics (face, ears, and scars/marks/tattoos) authentication. It uses mathematical operations by using any form of signal processing for which the input is an image, a series of images or a video (ex. photograph or video frame). The output of image processing may be either an image or a set of characteristics or parameters related to the image, i.e., Optical Character Recognition.

Sole-Source SBIR Program - Bashpole Software, Inc. is a sole-source justified contractor with a primary performance history with the Department of Defense (DoD) through the Small Business Innovative Research (SBIR) program. Congress intends agencies and their Government-owned contractor-operated facilities to give preference to SBIR awardees, including sole-source awards. Sole-source justification enables all departments and agencies to award sole-source contracts to

Bashpole by way of the SBIR Phase III contract mechanism, thereby bypassing the usual requirement to put projects out to bid. This greatly reduces the paperwork and time the DoD would normally need to begin work on a project. Bashpole and the DoD contracting officers can provide Government agencies with further information regarding FAR 6.302-5, 10 U.S.C. 2304(b)(2), 41 U.S.C. 253(b)(2), and how to proceed with this sole-source mechanism.

Past Performance

The company has federal and private industry customers located across the United States. Customers

have remarked on the professionalism, thoroughness, and great customer support they have received from the Bashpole team. In the private sector, they have additionally made positive comments on the increase in revenue they have received from the contact updates via phone-a-thons. The team will continue to improve upon its cutting-edge technology, enabling customers to take advantage of new and improved features on a regular basis.

Current / Recent Bashpole Projects:

- **DARPA** – Our current project is with the Defense Advanced Research Projects Agency's (DARPA's) Small Business Innovation Research Program (SBIR).
- **Universities & Colleges** – Pilot studies have been conducted with Eureka College, Eureka, Illinois; Huntington University, Columbia City, Indiana; and Taylor University, Upland, Indiana. These pilot studies were completed by initially analyzing their alumni contact records, providing phone numbers, email addresses, and physical address updates, as well as evaluating the success of these updates.
- **Non-Profits** – Numerous contracts with non-profit entities.
- **Consulting Clients** – Professional services consulting on how to do a better job of consolidating and managing their contact data.
- **City of Philadelphia** – Conducted a pilot study with the Licenses and Inspections Department of the City of Philadelphia.

Differentiators

With Bashpole's small tight integrated team of experts, we are able to quickly meet the demanding challenges of tomorrow's needs without the burden, bureaucracy, and overhead of a large company. Additionally, through our strategic partnerships with leading Defense Contractors, Bashpole can also efficiently deliver products as needed on a large scale.

Key Personnel

Dan Rissacher, Ph.D., has industry engineering experience with Lockheed Martin, L3 Comm, Tybrin, and NDJ. In addition, Dr. Rissacher has served for the past 14 years as an USAF F-16 Pilot holding a current TS/SCI clearance. He holds a B.S., M.S. & Ph.D. in Electrical & Computer Engineering. As an engineering professor, his research focus is pattern recognition and computer vision. Dr. Rissacher will be responsible for feature extraction, pattern recognition, and big data analytics. <https://www.linkedin.com/in/rissacher>

Mitesh Mehta leads the back-end software development efforts at Bashpole Software. He has over 8 years of experience in Software Development and implementing solutions based on

service-oriented architecture. He possesses extensive knowledge in several programming languages as well as SQL and NoSQL databases. Mitesh holds a B.S. in Electronics Engineering and an M.S. in Computer Graphics and Gaming Technology.

www.linkedin.com/in/miteshmehta

Tony Megna leads the System Engineering and Front-End Software Development at Bashpole Software. He has 10 years of industry experience as an engineer for companies including Raytheon and Ohio Technical Clearinghouse (Contract firm serving PEO Aviation) and holds a current Secret clearance. Tony also has a B.S. in Electrical Engineering, a Masters in Systems Engineering, and an M.B.A. His experience with front-end development will allow the team to deliver a powerful user interface. <https://www.linkedin.com/in/tonymegna>

Brandy Coomer manages business development, sales, marketing, customer support, and software development for Bashpole. She has 15+ years of experience in management, sales, customer service, and quality control. She provides consulting and support services for web-based design and development in addition to being the technical executive for a full service marketing agency specializing in marketing, advertising, and public relations. She has experience tutoring college students in Development Methods, System Modeling and Design, Database Management, and Web Design and Development. She has additionally served various local and national nonprofits acting as an officer, board member, volunteer, and other leadership positions. She holds a B.S. with focuses in *Web Design and Web Development*.

<https://www.linkedin.com/in/brandycoomer>

Benjamin Ashpole, is responsible for business management and will lead the software development team. Ben earned a B.S. in Computer Science, B.A. in Cognitive Science, B.A. in Mathematics, and M.S. in Computer Science. His technical expertise includes artificial intelligence, machine learning, complex adaptive systems, and scalable system design. Benjamin now manages technical development efforts so that projects proceed on time, on budget, and with success for all milestones. <https://www.linkedin.com/in/bashpole>

Company Data

D&B ranked, Bashpole Software, Inc. has been operating for more than 10 years in the software applied research and development industry. The company receives revenues from state and national government agencies. Additionally, the company collects revenues from paying customers.

CAGE: 5HML0

DUNS: 827378394

Federal Contracts:

- W31P4Q-09-C-0553
- W31P4Q-10-C-0050
- W91CRB-10-C-0160
- W31P4Q-11-C-0249
- W31P4Q-15-C-0091

- W911NF-16-C-0025

NAICS Codes:

- 541712 - Research and development in computer science
- 541511 - Custom computer programming services
- 541690 - Other scientific and technical consulting services
- 541990 - All other professional, scientific, and technical services
- 511210 - Applications software, computer, packaged
- 518210 - Data processing, hosting, and related Services
- 511140 - Address list publishers (except exclusive internet publishing)
- 519130 - Internet publishing, broadcasting, and web search portals
- 519190 - All other information services
- 541512 - CAD (computer-aided design) systems integration design services
- 541519 - Computer disaster recovery services
- 541613 - Marketing consulting services
- 541430 - Graphic design services
- 541810 - Advertising agencies
- 541830 - Media buying agencies
- 541860 - Advertising material preparation services for mailing or other direct distribution
- 541890 - Advertising specialty distribution services
- 541910 - Marketing research and public opinion polling
- 541820 - Public relations agencies
- 551114 - Corporate, subsidiary, and regional managing offices
- 561422 - Customer service call centers (data services)
- 561440 - Account collection services (data services)
- 621330 - Offices of mental health practitioners (via partner organizations)
- 813311 - Human rights organizations (via partner organizations)