

## BENJI SMITH

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### SOFTWARE DEVELOPMENT DIRECTOR

Outstanding software professional with over 8 years of experience in skillfully assessing business and client needs; developing superior algorithms, systems, and features; building high-performing teams; and managing complex projects for consulting and technology organizations. Leverage expertise in analytic systems, linguistic extraction, custom programming, artificial intelligence, and other areas to successfully fulfill clients' diverse business objectives. Proven leader and innovator committed to forging strong relationships with Fortune 500 and government clients, and adept at transforming cutting-edge research into applicable tools.

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R&D • Business Intelligence (BI) • Problem-Solving • Product Development and Management  
Team Leadership • Software Development • Strategic Planning • Entrepreneurship  
Artificial Intelligence (AI) • Analytic Systems • Pattern Recognition • Computational Linguistics  
Data Analysis • Algorithm Development • Prototype Creation • Requirements-Gathering  
Technical Architecture Design • Cross-Functional Collaboration • Machine-Learning Algorithms

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#### ***WRY RESEARCH, Boston, Massachusetts • 2007-Present***

An independently owned consulting firm specializing in research and artificial intelligence.

#### **President / Technical Director**

Develop and deliver outstanding software solutions to clients in industries including aerospace/defense, medical research, and new media. Assess client needs, define project requirements, and evaluate existing databases, tools, and methodologies to identify improvement opportunities. Plan project schedules and provide regular status reports to key stakeholders.

#### **Client/Project Highlights:**

- RAYTHEON CORP.: Simulated massive-scale multi-user collaborative behavior to test client's critical insider-threat detection software, instrumenting and automating a network of physical workstations to enact scenarios of data theft and miscompliance.
- COLUMBIA UNIVERSITY MEDICAL SCHOOL: Launched study of neurosurgeons' decision-making process in aneurism cases, focused on quantifying the contribution of each patient variable toward the final treatment decision. Particular emphasis on finding the boundaries between "standard of care" and "clinical equipoise".

#### ***MATCHMINE LLC, Boston, Massachusetts • 2007***

A start-up company offering technology to facilitate the delivery of customized content recommendations and targeted advertising for online media providers.

#### **Senior Science Engineer**

Served as 1st science department employee; grew research staff by hiring 4 team members. Supported creation of company's "personality model," a user-specific profile of media consumers' online behavior, by developing complex, underlying mathematical concepts. Leveraged expertise in building AI systems to enhance model's technical elements. Utilized database with 30M+ content items to create item-specific mathematical models; wrote tools for statistical reporting of item characteristics in content catalog. Balanced technical efforts with big-picture oversight to ensure alignment of project with business objectives and sales goals. Documented all processes to facilitate future activities.

*MATCHMINE LLC, Senior Science Engineer, continued...*

**Major Accomplishments:**

- Facilitated collection and categorization of millions of web documents by developing Java-based, multi-threaded, context-sensitive web crawler.
- Created numerous experimental design documents, which clarified the process for research initiatives, and implementation design documents, which detailed the process for integrating algorithms and models into service infrastructure.
- Liaised with partners and engineers to create systems integration plans.

**OAKLEY NETWORKS, Salt Lake City, Utah • 2005-2007**

A provider of network security software for businesses and federal intelligence agencies.

**Research Team Lead**

Selected as first research team member and challenged to create methodologies for insider threat detection, including document theft and company data destruction. Liaised with sales and professional services teams to establish use-cases for needs improvement initiatives. Created multiple statistical classification techniques, utilizing diverse algorithms, to facilitate identification of sensitive documents/data and enhance analytics system capabilities. Recognized need for new analytics subsystem; led 4 engineers in overhauling security policy construction/deployment semantics and establishing concise programming language to replace ineffective graphical interface. Collaborated with diverse stakeholders including executives, marketing staff, and other product subsystem owners to create product vision and requirements lists.

**Major Accomplishments:**

- Achieved stakeholder buy-in and led implementation team in delivering major system improvements encompassing language, compiler, policy template library, tool suite for new code resources, and training materials.
- Developed 2 patent-worthy inventions in statistical classification techniques; partnered with attorneys to prepare patent applications.
- Leveraged policy language system to achieve dramatic benefits: reduced test-cycle turnaround time by automating testing infrastructure in QA department; enabled sales team to bundle "standard policy pack" with product to enhance out-of-the-box value; and enabled professional services department to establish catalog of product artifacts to reduce client implementation customization labor.
- Oversaw creation of 75K+ lines of code in new policy language.

**ATTENSITY CORP, Salt Lake City, Utah • 2002-2005**

A \$20M provider of software for analyzing text documents and extracting key information for BI purposes.

**Computational Linguist**

Spearheaded diverse client engagements as technical lead; enhanced pre-sales activities by demonstrating value and potential to fulfill clients' business objectives. Oversaw projects for critical clients including Whirlpool, John Deere, Toyota, and multiple government agencies. Conducted on-site data assessments and identified clients' specific BI challenges. Developed customized implementation plan, established scope, and allocated project resources from Linguistics and Professional Services team. Provided frequent status updates to client executives. Led team in performing linguistic research as needed to fulfill project requirements in research-oriented environment.

ATTENSITY CORP, Computational Linguist, continued...

**Major Accomplishments:**

- Hand-picked to lead turnaround of critical Whirlpool project; established quality testing processes, revitalized 3 troubled modules, and salvaged client relationship within 3 months. Project success led to new \$2M contract and public endorsement of firm's technology.
- Directed \$250K pilot project for government client by strengthening customer relationship, leading 4-person team, and successfully delivering implementation yielding \$2.5M+ licensing revenue and service contracts.
- Improved software usage in linguistic analysis programs by regularly delivering 4-day training courses to federal intelligence stakeholders.

**NOTE:** Career history also includes role as Instructor at Provo College (2002).

**SELECTED TECHNICAL SKILLS**

**Algorithms and Techniques:**

- N-dimensional vector space models for information retrieval and content recommendation
- Domain-specific language design, compiler implementation, EBNF grammars, recursive-descent parsing with JavaCC and ANTLR
- Low-level sorting, searching, hashing, indexing, and fuzzy string-matching algorithms
- Time-series statistical analysis of financial data: including price oscillators, volatility metrics, relative strength indicators
- Probabilistic classification engines, using Bayesian networks, byte-frequency analysis, pattern-matching, and agglomerative clustering
- Extensive regular expression expertise, with multiple engines and dialects
- Monte Carlo simulation methods, especially in testing state-machine based systems
- Autonomous Agent systems, using 10,000+ concurrent threads of agent logic to model social behavioral systems.

**Programming Languages:**

Java • .NET • C# • WPF/XAML • SQL • Perl • Python  
JavaScript • HTML • PHP • Ruby • C++ • STL

**Other Tools:**

Eclipse • Visual Studio .NET • Subversion • CVS • Apache Server  
Tomcat • Jetty • Jira • Confluence • MySQL • MS SQL  
MS Office • Windows • Linux • Cygwin

**EDUCATION**

**Coursework in Computer Science**  
University of Utah, Salt Lake City, Utah

**Bachelor of Arts in Theatre/Playwriting**  
Brigham Young University, Provo, Utah