

Steven L. Rohall
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Summary Highly-experienced practitioner with a background in research, software development, and management—employing computational methods in the analysis of data, particularly unstructured text, network, and social media data, to solve critical business problems. Focus areas include data analytics and machine learning, recommender systems, expertise discovery, collaborative computing, and information visualization. Responsible for reviewing projects with customers and sponsors, managing development efforts, and acting as liaison between customers and development teams. Other activities include writing and reviewing academic papers and patent disclosures and mentoring junior staff.

Experience Highlights

2020 - Present *GSA, IT MODERNIZATION CENTERS OF EXCELLENCE* *Washington, DC*
Data & Analytics Lead

The Centers of Excellence accelerate IT modernization at Federal agencies by leveraging private sector innovation and government services while centralizing best practices.

- Advise Federal agency partners on the design and implementation of strategic data, analytics, and artificial intelligence capabilities and solutions to drive modernization and cost savings.

2014 – 2020 *NOVARTIS INSTITUTES FOR BIOMEDICAL RESEARCH* *Cambridge, MA*
Associate Director, Informatics Systems

The Novartis Institutes for BioMedical Research is the global pharmaceutical research organization of Novartis focused on discovering innovative new drugs.

- Designed and implemented *Chem Recommender*, a system for suggesting related work to medicinal chemists based upon recent entries in their laboratory notebooks, eliminating duplicate effort among scientists. Developed a unique method of determining reaction similarity using a TF-IDF data store. Resulted in peer-reviewed papers, *Recommendations for chemists: a case study*, presented at ACM RecSys'18, and *An artificial intelligence approach to pro-actively inspire drug discovery with recommendations*, published in the *Journal of Medicinal Chemistry*. Received corporate award for innovation.
- Applied natural language processing techniques such as named-entity recognition and machine learning approaches including unsupervised topic modeling to scientific databases in order to discover and characterize scientists' interests and expertise in order to improve intranet search.
- Conducted user research and managed implementation efforts.

1998 – 2014 *IBM RESEARCH, Senior Technical Staff Member* *Cambridge, MA*
IBM Research seeks to transform basic scientific and engineering knowledge into new products, technologies, and services.

- Developed a real-time, streaming visualization of Twitter data, using topic modeling and sentiment analysis resulting in improvements to a visualization toolkit product.
- Led development of the *Reinventing Email* prototype. Contributed code to the product team which included novel visualizations of email data. Co-authored numerous peer-reviewed publications. Received an *IBM Outstanding Technical Accomplishment Award*

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recognizing a research contribution to IBM in excess of \$100 million.

- Directed the research and development of a web-based ideation system utilizing natural language processing and social analytics, improving the quality of large, distributed conversations.
- Recognizing that many development teams are distributed, integrated Lotus *Sametime* awareness and instant messaging into the Rational *Team Concert* integrated development environment. The new product features resulted in an *IBM Technical Accomplishment Award* for the team.

1994 – 1998 *TASC, Senior Member of Technical Staff* *Reading, MA*

TASC is a leading provider of enterprise systems engineering, mission-enabling architectures, and value-based solutions for national security and public safety.

- Addressing the need for a more flexible command center, served as Program Manager for the *Visual Information Environment Prototype*, investigating the combined use of collaborative computing and novel, gesture-based input technologies to support next-generation command and control systems and leading the development effort.
- To expand the market for a financial services company's data, served as Program Manager and development lead of a new web site, resulting in the first availability of this data to individual investors.
- Designed and implemented a collaborative viewing tool for extremely large images enabling commercial access to this advanced technology.

OTHER PROJECTS

- Implemented a system for building synchronous, multi-user applications. Built primitive graphical objects and specialized color and image-handling software.
- Designed and implemented a network audio server which included speaker identity verification and an API for third-party developers.
- Implemented the user interface for a personalized information filtering system.

Education *MASSACHUSETTS INSTITUTE OF TECHNOLOGY* *Cambridge, MA*

- Master of Science in Electrical Engineering and Computer Science (concentrating in computer science). GPA: 5.0 (scale of 5.0). Sigma Xi Honor Society.
- Bachelor of Science in Computer Science and Engineering. GPA: 4.7 (scale of 5.0). Tau Beta Pi and Eta Kappa Nu Honor Societies.

Selected Technologies Languages: JavaScript, Java, Python, C/C++, Lisp dialects
Databases: Elasticsearch, MongoDB, CouchDB, relational (DB2, Oracle, SQL Server)
Platforms: NodeJS, Lotus Notes, Eclipse
Toolkits: RDKit, Gensim, D3.js
Web: Apache HTTPD, J2EE (Tomcat, Jetty), ExpressJS, Bottle, CGI, HTML
Deployment: AWS (EC2, Elasticsearch Service, CloudWatch, Parameter Store, CloudFormation), Chef, Jenkins
Able to pick up new technologies as needed.

Patents and Publications Forty-five technical publications. Seventeen patents and five patents pending. Available on personal website, <https://slrohalla.com>.

Professional Activities MIT Educational Council
Member of the ACM, ACM SIGCHI, and AAAS