

# Patrick Wagstrom

Data Science and Artificial Intelligence Leader

51 Edgewater Dr, Coventry, CT 06238

patrick@wagstrom.net, 412-606-9730

Proven executive leader of cutting edge data science and machine learning organizations. Accelerate data science and artificial intelligence by combining best practices from cloud deployment, devops, and human-computer interaction. Hands-on leader that builds cohesive distributed organizations by bringing together the best people from many backgrounds to create a shared sense of vision and ownership.

---

## Professional Experience

### **Director of Emerging Technology**

September 2019-Present

Verizon, Basking Ridge, NJ and Coventry, CT

- Work with executives including Global CIO, Chief Data and Analytics Officer, and Chief Architect to define Verizon's overall machine learning strategy.
- Define and architect overall enterprise strategy for reproducible machine learning (MLOps) including data management, model training for deep learning and traditional models, model serving, and model refit across on prem and cloud environments.
- Contribute to Verizon's overall validation, risk, and monitoring strategies for machine learning models.
- Defined, recruited, and hired to build a globally distributed organization from the ground up.
- Lead team building out tooling and process for model registration and data monitoring.
- Responsible for a \$13 million dollar budget to explore and build emerging technology prototypes within a globally distributed organization.

### **Senior Director of Data Science for Machine Learning Platforms**

January 2019-September 2019

### **Director of Data Science for Machine Intelligence**

November 2016-January 2019

Capital One, New York, NY and McLean, VA

- Architect and overall lead for the Capital One Card Machine Learning Platform - a platform for scalable and personalized training and serving of real-time deep learning and reinforcement learning models on top of Kubernetes, gRPC, and AWS inside a regulated industry.
- Architected solution for transitioning Capital One's speech recognition models and platform from an overnight batch task to a scalable near-real-time process utilizing a custom speech-to-text model, Amazon Connect, and Kubernetes.
- Built out a research team, including academic partnerships, to explore machine learning fairness and aspects of real-time model monitoring.
- Led a distributed team of data scientists, data engineers, and product managers to deliver our platform in a complex enterprise environment.
- Led a distributed team to build robust machine learning models that incorporate both unstructured text and structured analytical data to identify customer issues in a large corpus of customer communication.
- Managed, grew, and nurtured a team of data scientists across multiple states.

### **Research Staff Member/Chief Architect for Tooling**

January 2015-November 2016

IBM Watson, Littleton, MA

- Led a globally distributed team that built the IBM Watson Conversation service - an innovative service to create rich interactions using natural language processing, entity recognition, and scripted dialog.
- Global team lead for Watson Developer Cloud Tooling. Created cutting edge applications for creating, training, and maintaining cognitive and machine learning solutions including Watson Engagement Advisor and IBM Watson Natural Language Classifier.

- Conducted research on optimal methods to build and configure cognitive and machine learning systems resulting in a 95% reduction in human time required to train these systems.
- Presented cognitive solutions and technologies to more than a dozen companies in six countries.
- Developed best-of-breed modern web application architecture based on Angular, Node.js, GitHub Enterprise, Slack, UrbanCode Deploy and more.

### Research Staff Member

January 2014-January 2015

IBM Watson - Watson Life, Yorktown Heights, NY

- Leadership team member responsible for evaluating promising consumer applications of cognitive computing and guiding teams in lean startup and IBM design thinking processes to explore ideas.
- Organized and led globally distributed teams on how to contextualize solutions to cognitive computing challenges.
- Project lead for the IBM Food Truck at SXSW which demonstrated cognitive computing to more than 4,000 people and resulted in more than 1 billion media impressions.
- Planned and executed international workshops on design thinking methodologies.

### Research Staff Member

August 2009-January 2014

IBM TJ Watson Research Center, Yorktown Heights, NY

- Analytics lead for JazzHub, IBM's cloud software development strategy. Designed analytics strategy, implemented metrics driven development, introduced A/B testing, and developed analytics dashboards.
- Developed and designed GitMiner - an open source project used by 15 universities to perform graph analysis on large scale software engineering databases such as GitHub and BitBucket.
- Led a research team to evaluate productivity of new users and small teams using IBM's enterprise software engineering and product development environments.
- Published papers on topics around distributed collaboration, technical debt in software, and flow of ideas in software engineering communities.
- Managed research on interactions around software development with three different universities through an Open Collaborative Research grant
- Mentored three Ph.D. level student interns on projects related to data mining and modeling collaboration in software engineering

---

### Education

**Ph.D. in Engineering and Public Policy and Computation, Organizations, and Society**, May 2009

Carnegie Mellon University, Pittsburgh, PA

Thesis: "Vertical Interaction in Open Software Engineering Communities". Advisors: Dr. James Herbsleb and Dr. Kathleen Carley.

**MS in Computation, Organizations, and Society**, May 2007

Carnegie Mellon University, Pittsburgh, PA

**MS in Computer Science**, August 2003

Illinois Institute of Technology, Chicago, IL

Thesis: "Scarlet: A Framework for Context Aware Computing". Advisor: Dr. Xian-He Sun.

**BS in Computer Science / BS in Computer Engineering / BS in Electrical Engineering**, May 2002

Illinois Institute of Technology, Chicago, IL

---

### Select Technical Skills

**Programming Languages:** Python, SQL, Java, JavaScript, Shell

**Systems and Technologies:** Kubernetes, AWS, Docker, distributed systems architecture, relational databases, nosql databases

**Machine Learning Frameworks and Libraries:** scikit-learn, Jupyter, TensorFlow, IBM Watson, ONNX