Patrick Wagstrom

Data Science and Artificial Intelligence Leader
patrick@wagstrom.net, https://patrick.wagstrom.net/, 612-217-2874

Executive leader of cutting edge data science and machine learning teams. Accelerate data science and artificial intelligence by combining best practices from machine learning, risk management, cloud deployment, devops, and human-computer interaction. Hands-on leader that builds cohesive distributed teams by bringing together great people from diverse backgrounds and creating a shared sense of vision and ownership.

Professional Experience

Director of Emerging Technology
September 2019-Present
Verizon, Basking Ridge, NJ and Hartford, CT

- Build and lead a multi-location team of 20 FTEs and additional vendor contractors with a $15mm annual budget
- Define and architect overall enterprise strategy for reproducible machine learning including data management, model training, model serving, model refit, and model risk management
- Lead proof-of-concept solutions around blockchain identity and asset management, augmented and virtual reality, cross-device biometrics, IoT, and more

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 real-time reinforcement machine learning models on top of Kubernetes, gRPC, and AWS inside a regulated industry.
- Led a distributed team of data scientists (12), data engineers (22), and product managers (3) to deliver our platform in a complex cloud-based 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 18 data scientists across four states.
- Built out an academic research partnership with universities to explore implications of fairness in artificial intelligence.

Research Staff Member/Technical Lead
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.
- Technical and strategy contributor to IBM's research and acquisition strategy for software development tools and processes.
- 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.

Graduate Research Assistant
August 2003-July 2009
Carnegie Mellon University, Pittsburgh, PA

- Designed and developed CVSMiner an open source tool to perform social network and technical analysis of software engineering ecosystems such as GNOME and Eclipse.
- Worked with members of the GNOME Foundation and Eclipse Foundation to evaluate and improve the relationships between non-profit foundations that manage open source ecosystems and commercial firms.
- Utilized a variety of qualitative and quantitative research methods: stakeholder interviews, message analysis, natural language processing, data mining, machine learning, and social network analysis to generate insight into largely ad hoc software development processes.

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, Linux, distributed systems architecture, relational databases, document databases, graph databases, data warehousing
Machine Learning Frameworks and Libraries: scikit-learn, TensorFlow, XGBoost, LIME, Shap