

Title: Science – from 3rd class citizen to 1st

Abstract: Machine Learning in the past decade has become a buzzword often added as an afterthought to existing organizations. Most tech organizations are either product driven or engineering driven, with either business objectives (customer adoption, usage, impact metrics), or engineering objectives (scale, cost, latency metrics) driving prioritization. When scientists get added, we tend to start as a 3rd class citizen, eking small wins in rigid business processes, product roadmaps, and technology stacks. Even in organizations making \$10M+ annual investments in ML, competing priorities with business and technology goals often relegate science ideas and experiments with potential 10x improvements to the proverbial next year. In this talk, I curate key elements, leveraging concepts from working backwards, product management, and change management, that have helped the science organizations I led go from 3rd class citizen to 1st, creating science-led solutions that shape product and technology decisions to drive step function changes in organizations.

Potential discussion points

- Preamble: Applied Research – (1) Research implies improving over state-of-the-art is a goal, and (2) Applied implies achieving business value. Why “Applied Research”? Why not just “Applied”?
- What matters? Working Backwards – Who is the customer? What is the prevailing pain point?
- Is ML the product? Or is it a component of a product (read: nice to have)?
- Change Management: How do we get there? Best practices and pitfalls. How do we stay the course? Framework for influence: who do we need to influence? Product? Engineering? Both?
- Scientist management: How do we keep scientists engaged and motivated as changes occur?

An explanation about relevance of this talk/panel discussion to the workshop

There’s a laundry list of topics that managers could focus on. This talk focuses on key elements to establish and maintain science as a partner on an equal footing with product and engineering.

Information about the presenter:

A short bio of the main presenter (~100 words)

Mingwei Shen is a Senior Manager of Machine Learning at Amazon. Since 2013, he built data and science teams in both Amazon and Adobe across 5 organizations, launched and improved 20+ ML solutions across customer growth and retention, product recommendations, visual inspection automation, regulatory classification, and safety risk. His teams have published research across applied NLP, CV, explainability, and multi-modal topics.

A brief company or project portrait (~60 words)

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