NON-GENERATIVE AI AND THE USER EXPERIENCE: MY PERSONAL FIELD NOTES

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March 15th-16th, 2024
About Me

- Founder, User Experience Research, LLC
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- Data scientist and user experience researcher/leader
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What is the Difference? Does it Matter?

- NVIDIA: “Generative AI models use neural networks to identify the patterns and structures within existing data to generate new and original content.” [italics mine]
- Non-supervised or self-supervised learning (no feedback).

- Non-generative AI includes:
  - Neural networks that are supervised;
  - Expert systems;
  - Robotic Process Automation;
  - Supervised data modeling;
  - Machine learning that is supervised.
Do You Care What’s Inside?
How Does Your Thermostat Work?

- Do you care what’s inside?
- Or not?
Do You Care Now?
How About Now?
Part 1

How I proposed a framework and metric for evaluating the performance of AI in predicting project profits
Building My Own Neural Network Model without Coding

- BrainMaker (CS) software
- Uploaded the data via an Excel spreadsheet
- Trained the network on a variety of learning parameters overnight(s)
- Used Root Mean Square (RMS) as the basis of comparison with regression analysis
How Backpropagation Works

- (Source: builtin.com) “Backpropagation is a process involved in training a neural network. It takes the error rate of a forward propagation and feeds this loss backward through the neural network layers to fine-tune the weights.”

- That’s for the people who care.
Part 2

How I helped AT&T improve several key metrics by using UX design and research to implement an expert system
Human-factors engineer for expert telecom system pilot

- Business Challenge
- Solution
  - Co-authored system engineering doc
  - Conducted cognitive walk-throughs
  - Conducted ethnographic research
  - Interviewed SMEs
  - Conducted pilot training
  - Selected typical scenarios

- Takeaway: Knowledge of expert systems helpful
How I used my UX-related skills to support the implementation of Robotic Process Automation projects

Part 3
Researcher and SEO Article Writer for RPA Services

- Business challenge
- Solution
  - Learned about client’s services
  - Researched success stories
  - Wrote a dozen SEO articles
- Takeaway:
  Knowledge of AI, ML helpful
RPA UiPath Example

Transcribing PDF data into SAP from an inbound Outlook email from a customer/vendor with UiPath RPA

1. RPA opens Outlook
2. Opens PDF invoices from an Outlook email
3. Extract the data from the PDF
4. It then validates to make sure the customer is in SAP
5. Copies the relevant info into SAP from the PDF

Key RPA actions used:
1. Logging into applications
2. Navigating screens and toggling between applications
3. Data conversion into correct format for SAP
4. Extract data from excel into SAP

https://www.youtube.com/watch?v=fjdLAqgwMKA

https://www.youtube.com/watch?v=bz4KiMctmkE&t=24s
How my ethnographic research laid the groundwork for future AI data modeling
Business Challenge

Solution

- Conducted “day in the life” research
- Client in exploratory stage
- Eventually, to implement as AI-assisted software

Takeaway: Knowledge of expert systems and ML helpful
Part 5

How I used my background in machine learning and UX to provide user-centered documentation of an exciting, new healthcare IT product
User-centered Technical Content for Healthcare Product

- **Business challenge**
- **Solution**
  - “Reverse engineered” feature validation scenarios
  - Wrote or edited 100 user-centered articles
- **Takeaway:** Knowledge of ML was useful
  - No one else on the writing team had ML experience!
  - No one else on the product team could write user-centered documentation!
Identifying Data Errors and Trends

Solving the Impossible for COVID-19 with Medidata Technology

“We understood and knew that this data analytics solution, Detect, could enable us with identifying the various or potential data errors and trends within the data. This would then allow us to improve data integrity and reduce the trial risk.”

— Laurie Callen
Senior Director of Clinical Data Management
Moderna
Centralized Statistical Analytics (CSA)

- Part of Detect™
- Lets clinicians run big data analytics
- Proprietary machine learning algorithm
- Clinicians can adjust learning parameters, but probably won’t
- Processes up to 1M data points in <1hr
- Reduces risk
Some Learning Parameters That Are Not the Main Interest of Target Users

- Cluster distance threshold
- Cluster configuration setting
- Cluster outlier threshold
- One- and two-dimensional error threshold settings
- Distance threshold for variable clustering, & for tables
- Quantile for patient similarity detection
Takeaways

- “Calculus-free”, user-centered design, research, and related services for AI implementations
- AI has been around for decades, including non-generative AI
- Generative AI vs. non-generative AI—is there supervised learning, or not?
- Recommendation: Build your own no-code AI implementation!
  - You will learn a lot.
  - It’s not that hard.
Some No-Code AI Options

- Amazon SageMaker
- Akkio
- Apple CreateML
- DataRobot
- Google AutoML
- Google TeachableMachine
- Microsoft Lobe
- Nononets
- ObviouslyAI
- PyCaret
My Fellow Techies

- “You have a right to unionize.
- You have a duty to unionize.
- You have more in common with other workers than with your boss.”
- CODE-CWA.ORG

Thank you, Mike Monteiro!