Steve Schmidt

Director, Machine Learning Research & Development

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Technical Overview

Code & Platforms: Python (PyTorch, OpenAI, RLlib), C (MPI, CUDA), C++, SQL, SageMaker, Databricks
Projects: Deep Reinforcement Learning (RL) for Single, Multi-Agent Coordination & Competition, Custom OpenAI Gym Environments (Python, Gazebo/ROS), Transformers, LLM's for Search & RecSys

Accolades

2024 Emmy® Award (Technology & Engineering) FCC Spectrum Auction Design
2021 INFORMS Operations Research & Analytics Prize (Wayfair Data Science)
2020, 2019 BAE Systems Chairman's Award Nominations (2020 Innovation of the Year Award -Mindful™)
2018 Franz Edelman Award (Operations Research for the novel 2016 FCC Incentive Auction)
2016 DARPA Grand Challenge Finalist (Deep Red)

Adjunct Faculty Appointment 2020-Present

Adjunct Professor, Undergraduate & Graduate Machine Learning (Northeastern University, Boston, MA)

Highlighted Professional Experience

Director (Interim Sr. Director), Applied Science (ML/AI/RL), Nike, 2022-Current

- Lead & grow Nike's Digital Commerce Experiences (B2C/B2B) through state-of-the-art Machine Learning Systems powering Personalized Search, Browse, Recommendations, & Wholesale B2B Portals
- Lead integrated team of Applied Scientists and Machine Learning Engineers to optimize global resources against dynamic business requirements resulting in $200M+ annual incremental revenue
- Oversight of R&D for machine learning systems including the AIR (Artificial Intelligence Recommendations) Personalization Recommender System, Nike's Search System Large Language Models (LLMs) and Neural ReRankers, as well as a portfolio of in-house Machine Learning models
- Grew consumer science from bespoke batch models to real-time inference for Contextual Personalized Search, Recommendations, Marketing, Wholesale B2B (+125% CTR, +40% CVR, $500M+ EBIT)
- Drive innovative methods in Deep Reinforcement Learning for Multi-Objective Sort Optimization, privacy/GDPR compliant Neural Models, Sequential Learning Engines, and Generative AI applications
- Lead strategic planning across Applied Science verticals and cross-functional Engineering, Stakeholder Product teams in Commercial, Supply Chain, Product Creation & Merchandising, and Marketing

Search & Recommendations Principal Applied Scientist, Wayfair, 2021-2022

- Principal architect for consumer facing systems powering Personalization, Browse, & Recommendations over a catalog of over 20M products including LLMs and Sequential Learning Models
- Developed frameworks for research, experimentation, and rapid implementation of AI/ML systems for Product Curation & Merchandising of Recommendations across Global Browse pages and carousels
- Responsible for $50M+ incremental revenue through E-Commerce Platforms via Artificial Intelligence for Anonymous & Personalized Experiences, Behavior, & Process Optimization

Senior Principal Research Scientist, AI - BAE Systems (FAST Labs), 2018-2021

- Principal Investigator for DeepMission™: *Learning in Simulation* Applied Reinforcement Learning Platform for multi-domain, multi-agent, operational tactical studies, prototypes & integration, resulting in 20+ User Group, $35M+ program revenue, intellectual property patents, & publications

- Principal Investigator for DARPA CHASE System of ML/AI Algorithms, Tech Lead & Researcher on 10+ DARPA, AFRL programs in Automation, Control & Estimation ($50M+ Scope, 5-25 person teams)
- Technical Lead & Researcher ($10M+) for Competency Aware Machine Learning using unsupervised learning for neural inspection, Multi-Agent Hierarchical Deep RL for user based constrained targeting
- Enhanced Deep Learning Classification tasks with Reinforcement Learning via custom OpenAI Gym Environments, custom WaveNet architecture (RiftNet™), RiftNetXt™, & Mindful™ for Explainable AI
- AI/ML White Paper/Proposals ($20M+) co-authorships, lead for Decision Sciences, Game Theory pods

Senior R&D Engineer II - Raytheon (Centers of Innovation), 2015-2018
- Technical Lead over several DARPA programs, managing multiple project teams of 5+ in AI/ML
- CODE Center (IIS) Senior Leadership Team Strategy/Budgeting for 2018 Fiscal Year
- DARPA Grand Challenge, Finalist (Deep Red - 2016) Python/C++/MongoDB analytic R&D

Applied Mathematician / Technical Lead - FCC Incentive Auction Task Force, 2014-2015
- Technical Lead over software developers, mathematicians, and legal counsel resulting in $30B+ in auction proceeds, 2018 INFORMS Franz Edelman Prize, future academic/industry formulation reuse
- Applied Mathematician responsible for interpretation and implementation of auction mechanisms (from 2020 Nobel Prize Recipient) improving efficiency & solvability of optimization formulations

Director, Enterprise Business Intelligence - Maritz, Inc, 2010-2013
- Product Leader over internal initiative to develop single data warehouse environment for internal and external analytics, management of cross-departmental team 20+ (5 direct reports)
- Led client data warehousing, C-Level modeling of financial and marketing spend for Cisco Systems, Coca-Cola, Shell Oil, Microsoft, Thomson Reuters, AT&T, MillerCoors representing $10M+ in revenue

EDUCATION

THE UNIVERSITY OF CHICAGO, CHICAGO, IL
Master of Science in Computer Science

DEPAUL UNIVERSITY, CHICAGO, IL
Master of Science in Theoretical Mathematics

WINONA STATE UNIVERSITY, WINONA, MN
Bachelor of Science in Marketing

Ancillary Proficiencies, Experience & Organizations
- Ogilvy & Mather (Geometry Global, New York) - Director, Digital Marketing Strategy (7 direct reports)
- Meeting Trader Inc. (SaaS Startup, Chicago) - VP, Development 2008-2010 (2 direct reports)
- Hotel Sales Career (2003 - 2008), Salesperson Of the Year 2005, 2006 ($10-$20M per year)
- Client Advisory Board Member (StarCite, Cvent, Meetings Evolution, Inc. - Technology/SASS)

Highlighted Unclassified Public Releases
"Multi-Agent Reinforcement Learning Approaches to RiftNet™ RF Fingerprint Enhancement", 14th ACM Conference on Security and Privacy in Wireless and Mobile Networks, May 2021 (patent pending)
RiftNeXt™: Explainable Deep Neural RF Scene Classification, 14th ACM Conference on Security and Privacy in Wireless and Mobile Networks, May 2021 (US Patent US/2023/0004767)
"Reinforcement Learning Approach to Speed-Overmatched Pursuit Games with Uncertain Target Information", 5th Annual Naval Applications of Machine Learning (NAML 2021)
"Uncovering Strategies and Commitment through Machine Learning System Introspection", Springer Nature COMPUT. SCI. 4, 322 (2023)
"Machine Learning for NetFlow Anomaly Detection with Human Readable Annotations." IEEE Transactions on Network and Service Management, April 2021
"Automatic Knowledge Extraction with Human Interface", arxiv:2104.04415