Steve Schmidt

Applied Scientist, Artificial Intelligence

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Technical Overview

Code & Frameworks: Python (PyTorch, Keras, OpenAI, RLlib), C (MPI, OpenMP, CUDA), C++, C , SQL
Projects: Deep Reinforcement Learning (RL) Algorithms for Single, Multi-Agent Coordination & Competition, Interactive Learning, Hierarchical Decision Controls, Custom OpenAI Gym Environments (Python, Matlab, Gazebo/ROS), Deep Learning (Custom, InceptionVx, WaveNet), Planning & Search Algorithms, AutoEncoders & Reconstruction Models, Probabilistic Graphical Models, Applications of SVD & PageRank, Bayesian & Genetic Algorithms, Operations Research

Accolades

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)

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 (patent pending)
"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", Submitted.
"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

Web: www.theCprogramminglanguage.com   GitHub: https://github.com/stvschmdt

Highlighted Professional Experience

Search & Recommendations Senior Scientist, Wayfair, 2021-Current
- Product Recommendations architecture redesign for division wide experimentation & implementation
- Reinforcement learning cohort lead for future Search & Recommendations algorithmic design
- Cross-collaboration for multi-faceted consumer-supplier optimization over catalog of 20M+ SKUs

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, $25M+ 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 ($1-$10M) for Competency Aware Machine Learning using unsupervised learning for neural inspection, Multi-Agent Deep Reinforcement Learning with Bayesian Modeling of Human Machine Interaction, Hierarchical Reinforcement Learning for user based constrained targeting

- Enhanced Deep Learning Classification tasks using Reinforcement Learning via custom OpenAI Gym Environments, custom WaveNet architecture (RiftNet™), RiftNetXt™ (patent pending), & Mindful™ for Neural Policy Introspection (UMAP, Clustering, SHAP Variants) and Explainable AI
- Empower IRAD campaign selections (3), including top award out of over 100 entries for Multi Agent Coordination & Competition Reinforcement Learning studies with Explainability and Introspection
- 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
- R&D applications of GAN's, Bayesian, & Deep Learning models for intrusion detection systems
- R&D of information theory algorithm for natural language processing (*internal IP filed*)
- DARPA Grand Challenge, Finalist (Deep Red - 2016) Python/C++/MongoDB analytic R&D
- DARPA PlanX Python/C Developer for analytics and game play strategy

Algorithm Developer - FCC Incentive Auction Task Force (NCI, Inc.), 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
- Novel formulation for SVD and PageRank application to network station valuation graph
- Bayesian/ML analysis of empirical data to create subproblem optimizations for mix integer programming optimization resulting in zero value stations for higher optimality solutions
- Hierarchical Bayesian algorithm optimizing for auction theoretic scoring functions and soft constraints
- Development of distributed system architecture & master/sub problem decomposition code

Director of Enterprise Business Intelligence - Maritz, Inc, 2011-2013
- Program Manager over internal initiative to develop single data warehouse environment for internal and external analytics, management of cross-departmental team 20+ (5 direct reports)
- Lead client facing information director/business analyst responsible for client data warehousing, C-Level analysis, presentation of finance and event marketing spend for Cisco Systems, Coca-Cola, Shell Oil, Microsoft, Thomson Reuters, AT&T and 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

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

Ancillary Proficiencies, Experience & Organizations

- Ogilvy & Mather (Geometry Global, New York) - Director of Analytics (7 direct reports)
- Meeting Trader Inc. (SaaS Startup, Chicago) - VP, Development 2008-2010 (2 direct reports)
- Hotel Sales Career (2003 - 2008), Sales Person Of the Year 2005, 2006 (~$10-20M per year)
- Client Advisory Board Member (StarCite, Cvent, Meetings Evolution, Inc. - Technology/SASS)
- American Mathematics Society, IEEE Computer Society, American Marketing Association
- Raspberry Pi, Arduino projects, Academic Mentorships/Programs/Presentations, Startup Coaching
- Active USTA member (4.0-4.5 rating), former professional Foosball circuit (1999-2002)