SIEGFRIED MARTENS
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SUMMARY

Experienced data scientist with a successful history of working in many settings in academia and industry. A computer science degree from Dartmouth College, augmented with a PhD in neural networks from Boston University, led me to a career mixing scientific consulting with applied problem solving in tech startups. I've led many teams to success through challenging situations and I have a passion for bringing data to life, with analysis, modeling, and bespoke visualizations. Bilingual in English and French, some knowledge of Spanish and Arabic.

SKILLS & EXPERTISE

Data Analysis / Visualization, Machine Learning / Neural Networks, Simulation modeling.
Python, R + Tidyverse, MySQL, TensorFlow, PyTorch, MongoDB, AWS SageMaker

EXPERIENCE

Visualization and Data Science Lead | Stella Automotive AI | 2023 – Present

Led efforts in startup to put performance data in front of stakeholders and salespeople, e.g.:

- Automated reporting systems driving Customer Success department.
- Monitoring and alerts of AI voice systems performance at hundreds of auto dealerships.

Lead Data Scientist | Telepathy Labs, Platform AI Group | 2018 – 2023

Headed group focused on predictive models of user behavior:

- *Session and lead recommendation*: Built recommendation systems for conferences: recommending sessions to consider to attendees and leads to conference vendors. Deployed tool in use for recommendations at leading analyst firm.
- *Cybersecurity automation*: Designed recommendation of training modules and phishes, customized to a user's training/phish history (Recurrent Neural Nets application).
- *Purchase forecasting*: Investigated the use of 'basket embeddings' to predict corporate purchase patterns (doc2vec-inspired embeddings + RNNs).
- *Cybersecurity Risk Score*: Developed forecasting model mapping a user's history of training and phish exposure to their predicted risk level (Deep Neural Nets).

Senior Scientist | Icosystem | 2006 – 2017

Contributed both analytic and software development expertise across a range of projects for Fortune 500 clients, including:

- *Patient/doctor Rx*: Developed a population-level model of doctors, patients, and insurers in relation to migraine drugs, and led team to build client-facing simulation tool wrapping model (Agent-based model).
- *Afghan war sentiment modeling*: Modeled sentiments in insurgent groups for the US Navy, working with SMEs to inform the model, and led a team to build a simulation tool (Agent-based model).

- *Medicare market share simulation*: Built toolkit for large-scale simulations of the process of selecting Medicare plans. Worked on all aspects of project, from science to software development to data gathering from SMEs (Agent-based model).
- *Polyseries*: Created a novel visualization of populations over time – an innovative timeline for concise visuals of user behavior, applied in many projects, including senior Medicare enrollments, sailor careers and user phishing histories (Visualization).
- *Nymbler.com*: Worked on website for choosing baby names; application of interactive evolution, as the selection adapts in real time to user input (Evolutionary algorithms).
- *Human-centered route optimization*: Contributed to back-end application sold to the French Post Office and deployed nationwide. Delivered both mapping of postal routes, as well as cutting-edge customized route design (Evolutionary algorithms).
- *CDN optimization / web log mining*: Led two deep dives into data exploration and visualization – 1) to look for bottlenecks in content delivery networks, 2) to conduct an exploratory analysis of web traffic (Data analysis and visualization).

Postdoc Associate | Boston University Dept. of Cognitive and Neural Systems | 2003 - 2006

- Researched neural models of sensor fusion and remote sensing problems.
- Investigated methods for extracting knowledge hierarchies from data.
- Developed open-source implementations of ARTMAP models (tech transfer efforts).

Research Scientist | Verbind | 2000 - 2002

- Modeled users at a CRM startup.

Research Scientist | Artificial Life | 1998 - 1999

- Built chatbots at an internet startup.

EDUCATION

PhD in Cognitive and Neural Systems, Boston University

Doctoral degree studying neural network architectures, with a focus on memory and pattern recognition systems.

Technological investigations using neural networks, including:

- Remote sensing: Automated forestry mapping from satellite imagery.
- Robotics: Optimization of distance perception by fusion of sonar and visual data.

BA in Computer Science, Dartmouth College

Bachelor of Arts, with a focus on system design, compilers, machine architecture, algorithms, data structures, and artificial intelligence.

PATENTS

U. S. Patent Pending 2019/0,356,679 A1 (Nov 21, 2019)
"Systems and methods for determining individual and group risk scores."

U. S. Patent 8,725,755 B2 (May 13, 2014)
" Methods and apparatus or interactive name searching techniques."