

# Sophie Sackstein

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**Johns Hopkins University Masters in Data Science** (Current, Part-Time )

**University of Rochester** (Triple Major) Computer Science, Brain and Cognitive Science, Psychology

**BOOZ ALLEN LEAD MACHINE LEARNING ENGINEER**

*MARCH 2021-CURRENT*

Worked on SEPU- secure edge processing unit for sonar and aerial reconnaissance and integration with link 16 for cross-platform intelligence. Working on efforts related to the SAF-Fires implementation for the Firestorm OTA and crew reduction proposal. Currently researching simulation-based reinforcement learning for Tank engagement and automatic reasoning of schedule to fire and likelihood of enemy hit or friendly fire. Created a Toy Example in Unity with complex weather and materials in the terrain, such as sandstorms and snow fall, this example includes a genetic algorithm made to select Tank behaviors that maximize survival and enemy engagement. Also working on NASA human health and performance contract (creating human digital twin to mimic deep-space radiation effects) and working on an NLP webservice for NATO that answers queries regarding documents and displays results interactive d3graphs for the user. Fine-tuned and trained my own longformer-based model to summarize long documents for NATO Knowledge Wingman.

**NOVETTA MACHINE LEARNING ENGINEER**

*MAY 2020 – MARCH 2021*

Researched and applied current state-of-the-art machine learning algorithms including GPU-accelerated Entity Resolution and Rapids/Dask integrated workflows. Authored NLP suite solving problems such as question answering, keyword extraction, event detection, and abstractive summarization. Developed graph networks solutions including community clustering, node classification, and link prediction. Geospatial data organization and path predictions (cuSpatial) with Geojson and TIFF formats for Naval Research. TLE and Satellite orbital path generator. Modelling and Simulation with Godot for Disaster Recovery efforts.

**M&T BANK SOFTWARE ENGINEER**

*JULY 2019 - MAY 2020*

Used Docker and Kubernetes for container orchestration. Built CICD pipeline for deploying applications, Ansible to push configurations to VMs (created with VMware). Used KVM (with SELinux & sVirt) thus applying MAC security to guest VMs in test environments. Load balancing and implementing replication controllers in Openshift managed pods. AWS/Azure cloud computing (IaaS/PaaS). Also worked on a Fraud Detection project using GBM and anomaly detection.

**LISSA/ LEN LAB RESEARCH, UNIVERSITY OF ROCHESTER**

*JANUARY 2018 - JULY 2019*

Collaborated in building a conversational agent adapted for Autism. Developed web interface and formulated linguistic schemas for commonsense and auto cognitive reasoning using scalable inference engines for Episodic Logic. Deriving general world knowledge from text with domain reasoning, temporal rule-based probabilistic inference using algebraic probabilities.

**LAB MANAGER, COMPUTATION AND LANGUAGE LAB, UNIVERSITY OF ROCHESTER**

*SEPTEMBER 2017 -SEPTEMBER 2018*

Conducted research on development of numerical cognition cross-culturally- using Bayesian statistics to model human concept learning and relational reasoning. Lab manager duties included conducting meetings, handling IRB approval, HIPAA compliance, server maintenance and code reviews.

**LANGUAGES** (Python, Java, C, C++, R, Racket, SQL, PHP, Haskell, LISP, Swift, Javascript, CSS,Swift, Objective C, Matlab, OCAML, SPSS); **SOFTWARE** (MATLAB, Praat, WAMP, LAMPstack,Arduino, NVIDIA Jetson toolkit, Django, Flask, Ansible, Kubernetes, Openshift, Docker)PsychoPy); **TOOL BOXES** (NLTK, TensorFlow, OpenCV- Python, Scikit-Learn, Rapids, Tpot, AutoML, Unity, Godot, SAF-Fires,Unreal);