

# Mara Schwartz

☎ (914) 708-6823 | ✉ maraschwartz44@gmail.com | 🏠 maraschwartz.com | 🌐 Malorn44 | 🌐 mara-e-schwartz

## EDUCATION

**MASTER OF SCIENCE** | RENSSELAER POLYTECHNIC INSTITUTE

August 2021 - December 2022

COMPUTER SCIENCE, GPA 3.92 / 4.0

- Relevant Coursework: Machine Learning & Optimization, Machine Learning From Data, Distributed Systems & Algorithms, Parallel Computing, Computing & Quantum Computing, Design & Analysis of Algorithms

**BACHELOR OF SCIENCE** | RENSSELAER POLYTECHNIC INSTITUTE

August 2017 - May 2021

DUAL IN COMPUTER SCIENCE AND COGNITIVE SCIENCE

MINOR IN MATHEMATICS, MAGNA CUM LAUDE, GPA 3.86 / 4.0

- Relevant Coursework: Social Computing, Linear Algebra, Graph Theory, Intro to AI, Cognitive Modeling, Numerical Computing, Mathematical Models of Operations Research, Programming Languages, Computability and Logic, Operating Systems
- ALAC Tutor for Computer Science 1 and Data Structures, Undergraduate Teaching Assistant for Operating Systems
- UPE Honor Society Member
- Dean's Honor List (2017-2021)
- Rensselaer Leadership Award (2017-2021)

## PROJECTS

**MASTER'S PROJECT** | PYTHON, PYTORCH, TRANSFORMERS, SCIKIT-LEARN, NUMPY

Principal Investigator | 2022

- Performed dialogue analysis on Twitter user clusters to determine how influence campaigns propagate influence through social networks
- Identified prominent influencers and influential opinions within the user clusters using the SCIL toolset on constructed dialogues

**SOCIO-CULTURAL CONTENT IN LANGUAGE (SCIL)** | PYTHON, STANFORD CORENLP, NLTK, PYTORCH, TRANSFORMERS, SCIKIT-LEARN, KERAS

Project Lead, Developer | 2020-2021

- Developed an NLP toolset for identifying social roles (such as Leader and Influencer) using multi-turn dialogue analysis
- Increased the speed of the toolkit by several magnitudes compared to the previous Java version while maintaining performance
- Fine-tuned a 12-layer BERT model for classifying and automatically tagging turns with dialogue acts

**YET ANOTHER COURSE SCHEDULER (YACS)** | ANGULARJS, RUBY ON RAILS, TYPESCRIPT, POSTGRESQL, DOCKER

Project Lead, Developer, Mentor | 2018 - 2019

- Project lead and mentor for a team of roughly a dozen students in the Rensselaer Center for Open Source (RCOS)
- Improved website layout, functionality, and ease of use by creating a scheduling sidebar and implementing multi-semester scheduling
- Created an admin page to allow administrators to modify the database

## EXPERIENCE

**GRADUATE RESEARCH ASSISTANT** | LACAI LAB

August 2022 – February 2023 | Troy, NY

- Researcher on GATOR, an IBM-funded research project to prototype a new task-oriented human-machine dialogue system using transformers
- Led real-user evaluation and performed data analysis to compare with previous self-play evaluation using the "Persuasion for Good" corpus
- Co-authored and published our results in the AHFE International 2023 conference proceedings

**TEACHING ASSISTANT** | RENSSELAER POLYTECHNIC INSTITUTE

September 2021 – May 2022 | Troy, NY

- Teaching Assistant for Programming Languages (Fall 2021) and Data Structures (Spring 2022)
- Mentored students, created and graded programming assignments, graded tests, and held office hours and labs

**UNDERGRADUATE RESEARCH ASSISTANT** | LACAI LAB

May 2020 – August 2021 | Troy, NY

- Developed a tool for annotating belief extractions in text for use in ongoing projects within the research lab
- Lead developer for the Socio-Cultural Content in Language (SCIL) toolset, an NLP toolset for identifying social roles within dialogues

## PUBLICATIONS

[1] A. Sanders, M. Schwartz, A. Chang, S. Briggs, J. Braasch, D. Wang, M. Si, and T. Strzalkowski, Towards a proper evaluation of automated conversational systems, in Artificial Intelligence and Social Computing, vol. 72, July 2023. doi: 10.54941/ahfe1003276.

## SKILLS

- Programming Languages: C/C++, Python, Java, Javascript, SQL, Erlang
- Libraries/Frameworks: PyTorch, Transformers, TensorFlow, scikit-learn, AngularJS, Jupyter
- Tools: Git, Docker, Linux/Unix, L<sup>A</sup>T<sub>E</sub>X
- Languages: Limited working proficiency in Japanese