MATTHEW SUMPTER

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INDUSTRY

Sandia National Laboratories Jul 2021 - Present
R&D Software Developer

- Developed web backend services and features using Java with Spring Boot. Data was queried and modeled from an Oracle database
- Led the effort to automate our test suite using Cypress - automating > 400 hours of manual work/year
- Developed UI features to replace a legacy system
- Granted and maintained a DOE Q Clearance
- ***Tech:*** Java, Spring Boot, Kubernetes, Typescript, ReactJS, Cypress, Docker

SOFWERX Jan 2019 - May 2019
Primary Supervisor, David Salvador
Data Science Intern

- Developed a novel portable solution to intercept, classify and catalogue real-time radio signals on a NVIDIA Jetson TX-2 for USSOCOM.

EDUCATION

Masters of Science, Computer Science, University of South Florida Aug 2019 - May 2021
GPA: 4.0/4.0
Relevant Coursework: Data Mining, Machine Learning, Deep Learning, Social Media Mining, Network Science, Advanced Databases, Interactive Data Visualization
Advisor: Dr. Giovanni Luca Ciampaglia

Bachelor of Science, Physics, Florida State University Aug 2009 - Dec 2012
GPA: 3.25/4.0
Minor in Mathematics
Graduated with Honors
Advisor: Dr. Huan Xiang-Zhou

RESEARCH

Graphics and Visualization Lab Jan 2021 - Jun 2021
USF Computer Science and Engineering Department
Primary Investigator, Dr. Paul Rosen
Graduate Research Assistant

- Building a community-driven interactive map to communicate air pollution trends in Kansas City and promote grassroots activism. Project is being contracted by the environmental non-profit, CleanAirNow Kansas City.
- ***Tech:*** HTML/CSS, JavaScript, D3.js, Leaflet.js, RESTful APIs

Computational Sociodynamics Lab Jan 2020 - Jun 2021
USF Computer Science and Engineering Department
Primary Investigator, Dr. Giovanni Luca Ciampaglia
Graduate Research Assistant

- Currently investigating graph mining methods for generating and generalizing belief systems of online communities

- Developed an end-to-end pipeline for semantic triple extraction and ontology matching for the purpose of automated fact-checking
- Developed trend and sentiment analysis for the temporal evolution of Twitter data related to the COVID-19 pandemic
- ***Tech:*** Python, Numpy, Scikit-Learn, Tensorflow, RESTful APIs

Cyber Identity and Behavior Research Lab May 2019 - Jun 2021
USF Computer Science and Engineering Department
Primary Investigator, Dr. Tempestt Neal
Graduate Research Assistant

- Investigated trends in an online user's response to credibility warnings that preclude a news report, using qualitative and quantitative survey analysis
- Developing a novel technique for the fuzzy classification of writing samples by rhetorical modes
- Investigated techniques for multi-modal mobile authentication using both front-facing camera images and various sensor readings
- ***Tech:*** Python, NumPy, Scikit-Learn, Tensorflow, Qualtrics, Tableau, Android Studio (Java)

TEACHING EXPERIENCE

University of South Florida, Tampa, FL Aug 2019 - May 2021
Teaching Assistant

- Fall 2020/Spring 2021: Quantum Computing (*Dr. Richard Rauscher*)
  - Developed a series of R and QisKit programming assignments for current and future iterations of the course
  - Providing QisKit programming demonstrations
- Spring 2020: Data Structures (*Dr. William Hendrix*)
- Fall 2019: Senior Project in Info Tech (*Dr. Richard Rauscher*), Data Structures (*Dr. Valentina Korzhova*)

Club Z Tutoring, Tampa, FL Oct 2017 - May 2018
Tutor

- Tutored ages 10 - 17
- Mathematics: Algebra, Geometry, Pre-Calculus, Calculus
- Sciences: Physics (with and without calculus), Chemistry
- SAT Math and Grammar

Insight Adventures, Yangshuo, Guangxi Province, China Aug 2016 - Aug 2017
Outdoor Educator

- Taught lessons on rock climbing technique, kayaking technique, survival skills, orienteering, navigation, Leave-No-Trace ethics, and basic first-aid to K-12 international students
- Trained employees on high-rope safety skills and self-rescue
- Organized and managed a community service project for Hong Kong students to install a municipal water line to a rural school
- Organized and managed a community service project for Shanghai students to beautify a school for ASD students, including mural painting, garden creation, and peer learning

PUBLICATIONS

Peer-Reviewed

1. **M Sumpter** and GL Ciampaglia. (2021). Preserving the Integrity and Credibility of the Online Information Ecosystem. *IEEE Data Engineering* (http://sites.computer.org/debull/A21sept/p4.pdf)
2. RA Proma, **M Sumpter**, H Lugo, E Friedman, KT Huq, P Rosen. (2021). CleanAirNowKC: Building Community Power by Improving Data Accessibility. *IEEE Workshop on Visualization for Social Good* (https://vis4good.github.io/papers/2021/proma.pdf)
3. **M Sumpter** and T Neal. (2021). User Perceptions of Article Credibility Warnings: Towards Understanding the Influence of Journalists and AI Agents. *MEDIATE 2021 (AAAI ICWSM)* (http://workshop-proceedings.icwsm.org/pdf/2021_64.pdf)
4. **M Sumpter** and GL Ciampaglia. (2021). REMOD: Relation Extraction for Modeling Online Discourse. *KnOD'21* (https://arxiv.org/abs/2102.11105)
5. J Oberstaller, SR Adapa, GW Dayhoff II, J Gibbons, TE Keller, C Li, J Lim, M Pham, A Sarkar, R Sharma, AH Wani, A Vianello, LM Duong, Ch Wang, CGF Atkinson, M Barrow, NW Van Bibber, J Dahrendorff, DAE Dean, O Dokur, GC Ferreira1, M Hastings, GS Herbert, KT Huq, Y Kim, X Liao, X Liu, F Mansuri, LB Martin, EM Miller, O Natarajan, J Pang, F Prieto, PW Radulovic, V Sheth, **M Sumpter**, D Sutheland, N Vijayakumar, and R Jiang. Uncovering host-microbiome interactions in global systems with collaborative programming: a novel approach integrating social and data sciences [version 1; peer review: 1 approved with reservations]. F1000Research 2020, 9:1478 (https://doi.org/10.12688/f1000research.26459.1)
6. AC Miklos, **M Sumpter**, and H-X Zhou (2013) Competitive interactions of ligands and macromolecular crowders with maltose binding protein. *PLoS ONE 8*, e74969

Theses

1. **M Sumpter** (2012) Macromolecular Crowding Effects on Protein-Ligand Binding Equilibrium. B.Sc. Honors Thesis. Florida State University.

PRESENTATIONS

- **Workshop Presentation**: *User Perceptions of Article Credibility Warnings: Towards Understanding the Influence of Journalists and AI Agents.* MEDIATE 2021 (AAAI ICWSM), June 2021.
- **Workshop Presentation**: *REMOD: Relation Extraction for Modeling Online Discourse.* Workshop on Knowledge Graphs for Online Discourse Analysis, April 2021.
- **Poster Presentation**: *Continuous Multimodal Mobile Authentication: An Exploratory Study.* USF Research Experience for Undergraduate Poster Session, July 2019.
- **Undergraduate Thesis Defense**: *Macromolecular Crowding Effects on Protein-Ligand Binding Equilibrium*, December 2012.