Logan Riggs Smith

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Experience

Jan. 2021 – May 2021: Participant in AI Safety Camp – Wrote and presented a proposal on making neural networks modular to improve interpretability. Handled logistics and minutes for meetings for our group of six.

- Read existing works in modularity, interpretability, and spectral clustering
- Designed multiple experiments to verify both modularity and improved interpretability
- Reached out and questioned researchers with relevant expertise

May. 2019 – May 2021: Graduate Research Assistant, Mississippi State University – Coordinated with a group of 4-6 researchers, presenting updates on a weekly basis. Suggested and implemented machine learning experiments using tensorflow. Researched, wrote, and published technical papers.

- Created literature reviews for wireless physical fingerprints, zero-shot learning, and outlier detection
- Coded custom machine learning networks including MLPs, CNNs, and auto-encoders
- Pre-processed wireless signals with normalization, the Fourier transform, and the short-time Fourier transform

Jan. 2021 – May. 2021: Teacher Assistant, Mississippi State University – Assisted undergraduates in their Microprocessor lab. Submitted grades within a few days of student submission. Completed the lab personally the week before students to better help them.

Nov. 2017 – Aug. 2018: Software Developer (co-founder), WISPr Systems – Researched and implemented software solutions to allow drones to capture internet signal strength. Wrote documentation for our software. Created simulated autonomous flights plans and tested in real-world situations.

- Integrated custom web applications with a drone's on-board Raspberry Pi for manual and autonomous flight
- Installed and utilized 3rd party stereo cameras for obstacle avoidance
- Interfaced with the drone's odometry, video, and antenna information to receive live feedback over WiFi

Publications

Turner, A. M., Smith, L., Shah, R., Critch, A., Tadepalli, P. *Optimal Policies Tend to Seek Power* in Advances in Neural Information Processing Systems 34 pre-proceedings (NeurIPS 2021) (Spotlight Paper)

Smith, L., Smith, N., Kodipaka, S., Dahal, A., Tang, B., Ball, J. E., and Young, M. *Effect of the Short Time Fourier Transform on the Classification of Complex-Valued Mobile Signals* in [Signal Processing, Sensor/Information Fusion, and Target Recognition XXX], 11756, International Society for Optics and Photonics (2021)

Smith, L., Smith, N., Kodipaka, S., Dahal, A., Tang, B., Ball, J. E., and Young, M. *Effect of the Short Time Fourier Transform on the Classification of Complex-Valued Mobile Signals* in [Signal Processing, Sensor/Information Fusion, and Target Recognition XXX], 11756, International Society for Optics and Photonics (2021)

Smith, N., Smith, L., Kodipaka, S., Dahal, A., Tang, B., Ball, J. E., and Young, M. *Real-Time Location Fingerprinting for Mobile Devices in an Indoor Prison Setting* in [Signal Processing, Sensor/Information Fusion, and Target Recognition XXX], 11756, International Society for Optics and Photonics (2021)

Smith, L., Smith, N., Rayborn, D., Tang, B., Ball, J. E., and Young, M. *Identifying unlabeled wifi devices with zero-shot learning* in [Automatic Target Recognition XXX], 11394, 113940R, International Society for Optics and Photonics (2020).

Smith, L., Smith, N., Hopkins, J., Rayborn, D., Ball, J. E., Tang, B., and Young, M.*Classifying wifi" physical fingerprints" using complex deep learning* in [Automatic Target Recognition XXX], 11394, 113940J, International Society for Optics and Photonics (2020).

Oral Presentations

Identifying unlabeled wifi devices with zero-shot learning SPIE defense + Commercial Sensing Digital Forum (24 April 2020)

Effect of the Short Time Fourier Transform on the Classification of Complex-Valued Mobile Signals SPIE defense + Commercial Sensing Digital Forum (Accepted)

Education

MS Computer Engineering, Mississippi State University, 2021, Final Grade: 3.85/4.0

BSc Computer Engineering, Mississippi State University, 2018. Final Grade: 3.68/4.0