

Samuel Todd Flanagan

toddflan.github.io

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SUMMARY	Senior Software Engineer specializing in optimized, maintainable code Effective technical communicator	
EDUCATION	Texas A&M University College Station, TX	
	MS Computer Engineering	BS Electrical Engineering
	Research Autonomous Vehicle Localization	Minors Computer Science, Mathematics
	GPA 3.875 May 2021	GPA 4.0 May 2018
EXPERIENCE	Software Engineering Specialist Active TS Clearance	Jun 2023 – Present
	L3Harris Salt Lake City, UT	
	- Served as deputy engineering lead for an embedded Linux C++ software project with 10+ engineers - Optimized Xilinx C++ poke utility to write data to FPGA registers, 500k+ register writes in 2 seconds - Developed secure communications C++ software using TLS/DTLS 1.3	
	Engineering Scientist Associate	Apr 2021 – May 2023
	Applied Research Laboratories Austin, TX	
	- Developed a deep learning ensemble framework with comparative metrics and model visualization - Wrote a highly parallel, heap-based move median algorithm in CUDA C++, achieving 400X speed up - Created a custom implementation of Score-CAM, enhancing explainability for deep learning models - Advised team on machine learning capabilities, deficiencies, and underlying mathematics	
	Research Assistant, Graduate Student Worker	Jan 2019 – Jan 2021
	Texas A&M University College Station, TX	
	- Proposed enhanced NMI (Normalized Mutual Information) for autonomous vehicle localization - Developed a noise model for image acquisition in autonomous vehicles - Wrote numerical simulations in Python to evaluate algorithmic improvements	
	Product Development Engineer	Jul – Nov 2018
	Tanknology Inc. Austin, TX	
	Developed audio-based leak detection software, in C#, for the VacuTect® system	
	Splunk Developer	May – Aug 2017
	United States Department of Defense	
	Promoted data-driven decision making through the creation of effective Splunk dashboards	
	Product Development Intern	Jun – Aug 2016
	musx Austin, TX	
	Learned cross-platform mobile development in JavaScript using React Native	
	Electrical Engineering Co-op	May – Dec 2015
	L-3 Communications Greenville, TX	
	Test Engineering Intern	Jun – Aug 2014
	National Instruments Austin, TX	
SKILLS	Tech Stack: C/C++, Python, CUDA, Java (Familiar), SQL, Neo4j, Linux, Docker, Splunk	
	Engineering: Distributed Systems, Algorithm Optimization, Git, CI/CD, wolfSSL	
	Specializations: Deep Learning, Parallel Computing, Signal Processing, Cryptography	
RESEARCH	Signal Processing Improvements to Localization for Autonomous Vehicles	Master's Thesis
	My research focused on improving localization robustness in autonomous vehicles using signal processing techniques, with support from Ford Autonomous Vehicles LLC.	
	Enhanced Normalized Mutual Information for Localization in Noisy Environments	IEEE ASPCON 2020
	<i>S. T. Flanagan, D. K. Khublani, J.-F. Chamberland, S. Agarwal, A. Vora</i>	
	Localization in Autonomous Vehicles Using a Generalized Inner Product	IEEE GlobalSIP 2019
	<i>S. T. Flanagan, D. K. Khublani, J.-F. Chamberland, S. Agarwal, A. Vora</i>	