Sean Nian

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Education	San Jose State Un Bachelor of Science o GPA: 3.95/4.0	iversity f Computer Science with Honors	San Jose, CA August 2021-December 2024
Publications	K. Hollingsworth, S. <i>Distributed TinyML.</i> 2024, pp. 449-455. D	Nian, A. Gutierrez, and A. Padmanabhan. An [Short Paper]. IEEE/ACM Symposium on Edg OI: 10.1109/SEC62691.2024.00051.	n Analysis of Network Overhead in ge Computing (SEC), Rome, Italy,
	S. Nian and G. Ishig <i>Learning.</i> [Short Pap 2025. (Under Review	gaki. Autoscaling in Knative for Serverless Comper]. IEEE Global Communications Conference	nputing Using Deep Reinforcement e (GLOBECOM), Taipei, Taiwan,
Presentations	An Analysis of Netu IEEE/ACM Symposi	work Overhead in Distributed TinyML. [Sole Pro- um on Edge Computing (SEC), Rome, Italy, 20	resenter]. INTERACT Workshop, 024.
	An Analysis of Netwo CS Summer Research	ork Overhead in Distributed TinyML. [Poster, Constructional Seminar, 2024.	-presented]. Harvey Mudd College
Other	S. Nian, A. Huang [Preprint]. arXiv:241	, and B. Reed. <i>Building a Mastodon Compa</i> 2.09011 [cs.SI], 2024. DOI: 10.48550/arXiv.2412	tible Java Server for ActivityPub. 2.09011.
	S. Qi, X. I. Quan, T. Research – AI Tools Business Disciplines,	Park, and B. Makani. <i>The Role of Artificial Fevaluation</i> . [Acknowledged Research Assistance vol. 11, no. 3/4, Feb. 2025, pp. 90-114.	ntelligence in Enhancing Scholarly e: S. Nian]. Quarterly Review of
Research	ML Systems for Se San Jose State Unive • Developed a Dee izontal (pod cour	erverless Computing with Dr. Genya Ishi risity ep Reinforcement Learning (DRL) agent using I nt) and vertical (CPU/memory) scaling in Kna	igaki Aug. 2024 – April 2025 PPO to perform simultaneous hor-
	• Achieved superio 44% while increa	or performance over native autoscalers, reducin using request throughput by 18.6% in high-conc	ng memory consumption by up to urrency scenarios
	• Engineered a cus agent and progra	stom OpenAI Gym environment wrapping a liv ammatically apply scaling decisions by modifying	ve Kubernetes cluster to train the ng Knative manifests in real-time
	Optimizing TinyM Harvey Mudd College	L Systems with Dr. Arthi Padmanabhan e (NSF Funded REU)	May 2024 – July 2024
	• Engineered a dis partitioning a qu over Bluetooth I	stributed TinyML inference system using C++ antized TensorFlow MobileNet model and distri- Low Energy (BLE)	on ESP32-S3 microcontrollers by ibuting intermediate computations
	• Optimized the B ciency, analyzing	LE network communication protocol for enhance g network overhead to reduce the distributed in	ced fault-tolerance and energy effiference failure rate to 0%
	• Authored a 6-pa for publication a	ge paper on the network overhead and challenge nd presentation at the INTERACT workshop a	es of distributed TinyML, accepted at ACM/IEEE SEC 2024
	Decentralized Soci San Jose State Unive	al Media Networks with Dr. Ben Reed	Jun. 2023 – May 2024
	• Explored decent	ralized social media networks by analyzing the A	activityPub Protocol's architecture
	Engineered moth points with JSO.Reverse-engineer enabling full com	n, an open-source ActivityPub server in Java, by N payloads using Spring WebFlux to ensure rol red Mastodon's client-server API by analyzing apatibility between our moth server and the off	y implementing RESTful API end- bust decentralized communication g network traffic with Wireshark, icial Mastodon web frontend
Industry	PACCAR Silicon	Valley Innovation Center	May 2025-Present
Бурененсе	• Engineered a rea from AI-powered	l-time, edge-to-cloud data pipeline on an embe l cameras and vehicle sensors for ML model ser	dded Linux system to stream data ving

	 Enhanced an in-cab Android application (Kotlin) by developing new UI components and op backend C modules for efficient inter-process communication (IPC) and data processing Validated the end-to-end data acquisition system by conducting in-field truck testing and ing research on SAE/ISO standards to inform system design and ensure data compliance 			
	• Developed and presented a dynamic project dashboard to the Board of Directors, built with Nex React, and TypeScript to visualize real-time vehicle data and system status	sented a dynamic project dashboard to the Board of Directors, built with Next.js, cript to visualize real-time vehicle data and system status		
Awards	2025 NSF Graduate Research Fellow2024 NSF Student Travel Grant IEEE/ACM SEC2021 SJSU Gail Fullerton Endowment2021 SJSU XILINX Scholarship- \$2	,700 ,000 ,500		
References	 Dr. Genya Ishigaki Assistant Professor of Computer Science at San Jose State University, Email: genya.ishigaki@sjsu.o Dr. Arthi Padmanabhan Assistant Professor of Computer Science at Harvey Mudd College, Email: arpadmanabhan@g.hmc.o Dr. Ben Reed Assistant Professor of Computer Engineering at San Jose University, Email: ben.reed@sjsu.edu. 			