Jayneel Vora

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SUMMARY

Fifth-year Ph.D. candidate trained in core OS and ML systems, visual genAI, systems designing, and software development with solid communication skills developed from extensive teaching experiences. Sound ability to work independently and as a part of a team.

EDUCATION

University of California at Davis – Ph.D. in Computer Science (3.87/4.00)　　　　Sept 2019-expected Dec 2024
Co-Advisors: Dr. Prasant Mohapatra, Dr Prabhu RV Shankar, M.S in Computer Science (June 2023)

Institute of Technology, Nirma University - B.Tech in Computer Engineering　　　　2015-2019

SKILLS

Mathematical Maturity	Discrete Math, Calculus, Linear Algebra, Complex Analysis, Optimization
Theory Maturity	Federated Learning, Quantization, Deep Learning, Distributed Systems, Graph Representation Learning
Programming Language	Python, SQL, PHP, Qiskit, C, C++ read: R, Java, MATLAB
Framework and Tools	Tensorflow, PyTorch, Git, LaTeX, WinDbg, CUDA, ONNX, WSL

INTERNSHIP EXPERIENCE

Machine Learning Hardware Intern at Intel, Hillsboro, Oregon　　　　June-Sep 2023
- Designed and developed a framework to performance test NLP models in ONNX on generational Intel processors. (Py,C,Win,Linux)
- Focused on showcasing value to customers for DistilBert and LayoutLM with source control and optimizing the ONNXRuntime.

Operating Systems Intern at Intel, Hillsboro, Oregon　　　　Jan-Dec 2022
- Conducted workload analysis, optimized memory migration using PCIe device, and created performance histograms (C++, Python).
- Engineered kernel operations app/driver tools, enhancing source control with Git (C).
- Explored VM installation feasibility with dedicated memory, contributing to virtualization efforts.
- Streamlined development by devising driver templates fostering team source control awareness (Git, C).

Engineering Intern(Ph.D.) at Garrett Motion, Atlanta, GA　　　　Sep-Dec 2021
- Conducted attack surface analysis on V2X protocols, detecting vulnerabilities and developing a demo IDS for mitigation.
- Assessed market feasibility for V2X expansion by leveraging insights from the analyzed protocols and vulnerabilities.

Graduate Student Researcher at Lawrence Berkeley National Laboratory, Berkeley, CA　　　　Jun-Sep 2020
- Engineered privacy-preserving query engine within a 50k entries dataset, employing differential privacy frameworks (SmartNoise and OpenDP) for query accuracy; assessed Laplacian noise parameters' influence on convergence metrics.

AI and HCI Intern at BrunHealth Pvt Ltd, India　　　　May 2018-Apr 2019
- Implemented user-profiling algorithms, message matching, and an innovative information delivery system benefiting expectant mothers, resulting in a 29% boost in user retention and a 44% reduction in user turnaround time compared to human responses on FB page.

Tech Intern at Sentinel Healthcare, Seattle, WA (now Alertive Healthcare)　　　　May 2017 - July 2017
- Built a gait analysis wearable with 73% accuracy and contributed to a stroke detector facial recognition app using OpenCV.

SELECTED PUBLICATIONS (Google Scholar: [Link])

1. (submitted)**JV,** Nader Bouacida, Aditya Krishnan, Prasant Mohapatra, FedDM: Enhancing Communication Efficiency and Handling Data Heterogeneity in Federated Diffusion Models", WACV 2025
2. (submitted) **JV**,Aditya Krishnan, Prasant Mohapatra, "Accelerating 3D Semantic Segmentation With Hybrid 2D/3D Vision", IEEE MMSP 2024
3. (submitted)**JV,** Prasant Mohapatra, "Holding Diffusion Models Accountable for Identity Usage," IEEE Transactions On Privacy
4. (submitted)**JV,** Aditya Krishnan, Prasant Mohapatra, "Enabling Denoising Diffusion Models Sampling on Mobile Devices," CIKM 2024(submitted)
5. (submitted)**JV**, Aditya Krishnan, Nader Bouacida, Sairamvinay Vijayaraghavan, Jinyue Song, Doreen Joseph, Prasant Mohapatra, "A Survey of Trustworthy Text-to-Image Diffusion Models," IEEE SP 2025
6. **JV,** Suma Shankar, Abigail Higareda, Len Abeduto, Prabhu RV Shankar "Automated Identification and Indexing of Genes and Variants using Bidirectional Encoder Representations from Transformers", ACMG Annual Meeting
7. **JV**, Sudeep Tanwar, Sudhanshu Tyagi, Neeraj Kumar, and Joel J P C Rodrigues, "HRIDaaY: Ballistocardiogram-based Heart Rate Monitoring Using Fog Computing.", IEEE GLOBECOM-2019
8. **[best paper award]**Shriya Kaneriya, **JV**, Sudeep Tanwar, Sudhanshu Tyagi, "Standarising the use of Duplex Channels in 5G-WiFi Networking for Ambient Assisted Living",2019 IEEE International Conference on Communications Workshops (ICC Workshops): SecSDN: Secure and Dependable Software Defined Networking for Sustainable Smart Communities (ICC 2019 Workshop - SecSDN)

Journals
1. Samir Townsley, Debraj Basu, **JV**, Ted Wun, Chen-Nee Chuah, Prabhu RV Shankar, "Predicting Venous Thromboembolism (VTE) Risk in Cancer Patients Using Machine Learning" Health Care Science Journal (2023).
2. **JV**, Shriya Kaneriya, Sudeep Tanwar, Sudhanshu Tyagi, Neeraj Kumar, Mohammad Obaidat, "TILAA: Tactile Internet-based Ambient Assisted Living in fog environment" in Future Generation Computer Systems, Elsevier
3. Sudeep Tanwar, **JV**, Shriya Kaneriya, Sudhanshu Tyagi, Neeraj Kumar, Vishal Sharma, Ilsun You, "Human Arthritis Analysis in Fog Computing Environment using Bayesian Network Classifier and Thread Protocol" in IEEE Consumer Electronics Magazine

PROFESSIONAL ACTIVITY

1. Program Committee Member, GameSec 2021, 2022, 2023
2. Reviewer, Wiley- Security and Privacy Journal
3. Shadow Program Committee, IEEE Security and Privacy 2020
4. Reviewer, MICCAI 2024
5. Judge, HackDavis 2021, 2022
6. Program Committee Member, SIGCSE TS 2022,2023

TEACHING/ADVISING

1. Software Development & Object-Oriented Programming in C++, Lead Graduate Teaching Assistant　　　　Winter 2024
2. Teaching in Computer Science, Instructor　　　　Fall 2020, Fall 2021
3. Probability and Statistical Modeling, Lead Graduate Teaching Assistant　　　　Summer 2020
4. Discrete Mathematics, Lead Graduate Teaching Assistant(CS TA award 2021)　　Winter 2020, Spring 2020, Winter 2021, Spring 2021, Spring 2024
6. Undergrad Project Advised: Comparing Convolutional Networks on Edge AI Accelerators; Deepfake Detection in Video　　　　Spring 2024, Fall 2023