

SHREYA KADAMBI

◇ +1 (929) 370-2887 ◇ shreya.kadambi.20@gmail.com ◇ [linkedin.com/in/shreyakadambi](https://www.linkedin.com/in/shreyakadambi) ◇

SUMMARY

I am an experienced **Machine Learning (ML) Researcher** at **Qualcomm AI research** I have worked extensively on problems such as generative models in vision, on-device efficiency, inverse problems (e.g Object manipulation, Inpainting, RF-sensing, SLAM), Unsupervised models for assisted diagnostic radiology. My current focus lies at the intersection of generative AI (predominantly Diffusion) and efficient on-device models. I am involved in demos, papers and Invention disclosures in link [patent](#), [papers](#), [journal](#). My work on Neural RF SLAM has been cited on the blogposts [AI is enabling RF sensing](#), [Stable Diffusion](#). More recently we have published two works [1] [2] at NeurIPS'24

EXPERIENCE

Qualcomm AI Research, Engineer (Research Deep Learning) Jun 2020 - Present
Applied ML for Generative AI San Diego, CA

- Architectural improvements to context-style personalization and stylization adapters such as in Low Rank Adapter models.
- Research on training text to image generative **Diffusion** models for controllable **image synthesis** and **text-guided image editing approaches**.
- Research on Diffusion Distillation for Fast Sampling and Architectural efficiency for running on-device.

Applied ML for Wireless

- Augmenting signal processing approaches for enhancing **contrastive representations** for *Active positioning and Mapping*.
- Designed **physics-based encoder-decoder** models for mapping and position prediction.

Petuum, Applied Machine Learning Engineer Sep 2018 - Apr 2020
Applied ML for Healthcare Pittsburgh, PA

- Novel methods using GNN harnessing structural information to integrate domain knowledge into vision models, specifically for automated Chest X-ray diagnosis and report generation.
- Proposed baseline evaluation strategies to compare multiple radiologists' performance and model performance.
- Published a research paper aton Adversarial Discriminative Domain Adaptation applied to glaucoma Optical Coherence Tomography (OCT) images.

Nvidia, Deep Learning Intern Feb 2018 - May 2018
Autonomous Driving Group, Host: Dr. Urs Mueller (Eng Director) Holmdel, NJ

- Implemented bootstrapping technique to statistically aggregate data during training. This approach filtered a data cache containing *out of distribution* and *noisy data* at the end of training process.

Intel Corporation, DSP & Firmware Engineer Aug 2012 - Aug 2016
3G Physical Layer Team Bangalore, India

- Developed and deployed signal processing algorithms for interference cancellation module on Tensilica DSP core.

TEACHING EXPERIENCE

Teaching Assistant, Biostatistics for Public Health, Jan 2017 - May 2017
NYU school of Public Health

EDUCATION

New York University Aug 2016 - May 2018
Master of Science in Electrical Engineering, advised by Prof. Anna Choromanska

Indian Institute of Technology, Madras Aug 2010 - May 2012
Master of Technology in Electrical Engineering (*specialized in Signal Processing*)

PUBLICATIONS

FouRA: Fourier Low Rank Adaptation [link](#), S Borse*, Shreya Kadambi* Nilesh Prasad Pandey, Kartikeya Bhardwaj, Viswanath Ganapathy, Sweta Priyadarshi, Risheek Garrepalli, Rafael Esteves, Munawar Hayat, Fatih Porikli, (Accepted to NeurIPs 2024)

Sparse High Rank Adapters [link](#), Kartikeya Bhardwaj, Nilesh Prasad Pandey Sweta Priyadarshi, Viswanath Ganapathy, Rafael Esteves, Sweta Priyadarshi, (Accepted to NeurIPs 2024)

SubZero: Composing Subject, Style, and Action via Zero-Shot Personalization [arxiv](#)

Neural 5G indoor localization with IMU supervision, Alex Ermolov, Shreya Kadambi, Maximilian Arnold, (IEEE Globecom 2023)

Neural RF SLAM for unsupervised positioning and mapping with channel state information, Shreya Kadambi, Arash Behboodi, Joseph B. Soriaga, (IEEE International Conference on Communications (ICC) 2022)

WiNeRT: Towards Neural Ray Tracing for Wireless Channel Modelling and Differentiable Simulations, Tribhuvanesh Orekondy, Kumar Pratik, Shreya Kadambi, Hao Ye, Joseph Soriaga, Arash Behboodi, (International Conference on Learning Representations (ICLR) 2023)

WGAN Domain Adaptation for the Joint Optic Disc-and-Cup Segmentation in Fundus Images, Shreya Kadambi, Zeya Wang, Eric P. Xing, International Journal of Computer Assisted Radiology and Surgery (IJCARS 2020) & 11th International Conf. on Information Processing in Computer-Assisted Interventions (IPCAI 2020)

SKILLS

Frameworks: *PyTorch, DeepSpeed, Accelerate, Python, AWS*
DL models: *Generative models, for perception , Efficient on-device models*

PATENTS (PENDING)

- Fusion models for beam prediction: US20240144087A1
- Multi-Dimensional geometric wireless channel rendering using machine learning models: US20240112009A1
- Unsupervised location estimation and mapping based on multi-path measurements: US20230152419A1
- Spatial area layout reconstruction based on radio frequency measurements: WO2023225444A1
- Neural guard band interpolation for rf sensing: WO2024196916A1

PRESENTATIONS, AFFILIATIONS, AWARDS

- **Co-Lead** for QIF program [Qualcomm Innovation Fellowship](#).
- ***Presentations*** at NeurIPS '24 presented two works FouRA and SHiRA.
- ***Presentation*** of our work on *Neural RF SLAM* at [IEEE International conference on communications 2022](#).
- ***Presentation*** of our work *WGAN domain adaptation for the joint optic disc-and-cup segmentation in fundus images poster* at [Computer Assisted Radiology and Surgery](#).
- **Reviewer** for main conference at CVPR 2025 & ICCV 2025
- **Reviewer** for workshop on "Efficient Large Vision Models" at Computer Vision and Pattern Recognition 2024.
- **Reviewer** for workshop on "Foundation models for Science" at NeurIPS 2024
- Received **Wassermann internship Grant** at NYU Tandon School of Engineering.
- Moderated a **Panel talk** with External Researchers on AI for Healthcare covering topics such as privacy, data collection, and drug discovery.[Post on twitter](#) May 2023
- Qualcomm Woman in **ML podcast (internal)** **Host** May 2023
- Designed challenges and set up AWS environments for an **ML Hackathon** involving 300 participants. May 2023
- One of three **panelists** for the Women in ML & Data Science event [link](#) Pittsburgh meetup held at Petuum, Pittsburgh.
- Advised an undergraduate student NYU for 3 months during the Fall 2016 through a research project. Our work "*Performance Prediction and Risk Evaluation of Stocks and Portfolios using Probabilistic Bounds*", was accepted at 5th Undergraduate research competition held at Abu Dhabi. [link](#)

RESEARCH WORK

- ***Neural RF SLAM***: Proposed an interpretable latent neural network architecture for jointly learning user locations and environment mapping up to isometry, in an unsupervised way, from channel state information (RF signals) values with no location information. The model enforces a physics-based decoder.
- ***Domain Adaptation on Medical Data sets***: Developed a *WGAN* based adversarial domain adaptation framework to improve generalization capabilities of a segmentation model for retinal images. Implemented a novel patch discriminator leading to an improvement of Jaccard Index by 5% over the widely-used transfer learning approach.
- ***Adversarial Training Sample Size Minimization (Masters Thesis)***: Compared various empirical approaches to identify different sub-spaces in training domain most susceptible to adversarial attacks in order to build robust generalized models.
- ***Cognitive Visualizations using Hoeffding's Inequality***: Formulated a risk evaluation method using Hoeffding's Inequality that was less sensitive to underlying noise. Built a real time visualisation tool to predict confidence of Return on Investment (ROI). This work was demonstrated at a research expo held at *NYU Abu Dhabi*.