Easha Adhikarla

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OBJECTIVE

To acquire a challenging summer internship position utilizing my skills in Machine Learning, and Computer Vision.

EDUCATION

Lehigh University, **Bethlehem, PA, USA**
Ph.D. in Computer Science (Machine Learning) Aug 2020 - Present

Lehigh University, **Bethlehem, PA, USA**
M.S. in Computer Science Aug 2018 - May 2020

Rajiv Gandhi Proudyogiki Vishwavidyalaya (RGPV), **Bhopal, MP, India**
B.E. in Computer Science Aug 2013 - May 2017

EXPERIENCE

Lawrence Berkeley National Laboratory (LBNL) **Berkeley, CA**
Ph.D. Summer Intern (ESnet), (Supervisor: Dr. Ezra Kissel) June 2021 - Present
- To optimize the Data Transfer Node-as-a-service (DTNaaS) across WAN. I am involved in investigating containerization platforms and associated networking support, integrating storage systems, host system tuning, network path provisioning, protocol evaluation, transfer tool integration, and measurement collection.

Lehigh University **Bethlehem, PA, USA**
Peer Mentor, (Supervisor: Dr. Brian D. Davison) May 2020 - Aug 2020
- Led a session each week for 15 REU interns in one-to-one meetings, focusing on their conceptual understanding and development.
- Funded by NSF — CNS-1757787

Resilience Research Group for SARS-CoV-2 **Bethlehem, PA, USA**
Research Assistant, (Supervisor: Dr. Brian D. Davison) May 2020 - Aug 2020
- Image Gathering for face masks in the United States and designing a novel face-mask detection algorithm for a data science survey research on SARS-CoV-2.
- Funded by Lehigh Research Grants.

Lawrence Berkeley National Laboratory (LBNL) **Berkeley, CA, USA**
Research Intern (NERSC), (Supervisor: Dr. Brian Austin) May 2019 - Aug 2019
- Developed scripts to fetch and analyze petabytes of data from the SLURM scheduler.
- Analyzed & estimated real-time queues in the scheduler for optimizing the policies for incoming jobs.
- Developed three real-time policies that potentially improved the allocation procedure.

Persistent Systems **Pune, MH, India**
Machine learning Intern, (Supervisor: Dr. Bhushan Garware) May 2019 - Aug 2019
- Developed a facial recognition and verification system using Google's FaceNET research as the baseline which can directly learn from the 128x128 low dimensional representation.
- Added additional OpenCV features on top of it, which can differentiate between 3-D and 2-D images (a drawback of Google's FaceNET)
- Designed a purely browser-based RSA compliant module to work with FIDO keys.

RESEARCH PROJECTS

Memory Defense: More Robust Classification via a Memory-Masking Autoencoder Aug 2020
- Designed a robust auto-encoder for detecting adversarial images to mitigate adversarial attacks in a machine learning model.
- Designed a close proximity approximation estimator which can distinguish between distinct and distance manifold from different classes.

Face-Mask Detection on real-world Webcam dataset Feb 2021
- Successfully collected more than 900 Gb of public webcam data, by capturing image frames periodically from over 80 webcams across United States.

- Applied Coco-annotation semi-automated labelling to develop ground-truth labels.
- Re-implemented 4 state-of-the-art face detection algorithms for face detection & face mask detection to analyze their effectiveness in real-world dataset.
- Reported face mask usage across United States from Jun 23' 2020 to Feb 10' 2020.

Sequence Generative Adversarial Nets with Policy Gradient Jan 2020

- Seq-GAN is a unique approach which models the data generator as a stochastic policy in reinforcement learning to solve the problem with improvements in pre-processing.
- The RL reward signal comes from the GAN discriminator judged on a complete sequence, and is passed back to the intermediate state-action steps using Monte Carlo search.

Facial Recognition and Verification System Jan 2017

- Working with the accuracies and flaw removal strategies with re-implementation of Open-Face, for improving the range of applications in the domain of Security.
- Resolved the false positive 2-D inputs by introducing more features in Stage 1 (face detection) as a.) Orientation Normalization b.) 3D surface representation.

PUBLICATIONS

- Face Mask Detection in real-world Webcam Images, *Submitted in ACM GoodIT ITAC, 2021*
- Memory Defense: More Robust Classification via a Memory-Masking Autoencoder, *Submitted to BMVC, 2021*
- Estimating an HPC Facility's Capacity For Accommodating Real-time Workflows, Thesis, *National Energy Research Scientific Computing (NERSC), 2019*

PEER REVIEW

- IEEE Big Data Conference Fall 2020
- ACM SIGIR Conference on Research and Development in Information Retrieval Spring 2021

SKILLS

Programming Languages - C++, Python, Bash, Scala
Web Backend Technologies - MySql, MongoDB, NoSQL, HTML5.
Web Frontend Technologies - Pytorch, Tensorflow, OpenCV, dlib, Boost-C++, Cmake, scikit-learn, Docker, Kubernetes, Apache Spark, git, Latex

TEACHING ASSISTANT

- CSE 017 - Programming and Data Structures Fall 2020
- CSE 017 - Programming and Data Structures Fall 2019
- CSE 160 - Introduction to Data Science Spring 2019
- CSE 001 - Breadth of Computing Fall 2018

ACHIEVEMENTS & AWARDS

- **PC Rossin Fellowship**, Lehigh University (Spring 2021)
- Awarded by Cognizant, for the **Outstanding Project Award** in Facial Recognition with Deep Neural Network (2016-17)
- **Best Project Award** by the Department of Computer Science in RGPV university for 'Physical Intrusion Detection System' (2015-16)
- Ranked among **top 1 percentile** in TESTimony'16 organised by Tata Consultancy Services. (2015)
- Awarded by H.C.Verma (Experimental Physicist): Winner of the **National Level SCEECS'16**: Quiz Competition organised by National Institute of Technology, Bhopal (MANIT). (2015)
- Awarded a Trophy from **Central Board of Secondary Education** (CBSE) for performance in English subject (2013)
- Presented a Abstract Paper on Shell-shock Vulnerability at **National level technical symposium** in Bhopal: Which explained about how the attack vector works, the risks involved and how to mitigate them. This explanation of the Shell-Shock CVE was published in the National conference Magazine published by LNCT Group of College Bhopal. (2014)
- **All India Rank 598** in International Maths-Science Olympiads (2007)