

SHAFIN HAQUE

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EDUCATION

Saratoga High School

August 2019 - June 2023

Senior, GPA: 4.0 UW, 4.59 W (10-12)

Saratoga, CA

- Concurrently Enrolled College Courses: Multivariable Calculus (A), Object-Oriented Programming Methodologies in Python (A), Intermediate Software Design in Python
- Relevant Courses: AP Computer Science, AP Calculus, AP Statistics, AP Physics

EXPERIENCE

Computer Vision Research Intern

March 2022 – December 2022

UC Santa Barbara, Vision Research Lab

Santa Barbara, CA

- Worked with MARE Group to develop dataset for streamlining identification and counting process of underwater marine species in underwater ROV videos. Researched novel object detection methods to improve performances on our dataset.
- Wrote extended abstract accepted to NeurIPS LMLR proposing novel box prediction rebalancing method for single-stage object detectors to improve learning from partially labeled datasets. Also contributed to paper accepted to CVPR Workshop and The International Journal of Computer Vision.

Research Assistant

December 2021 – March 2022

Stanford University, QIAI Lab

Stanford, CA

- Researched the application of federated learning in medical imaging in order to improve security and accuracy of 2D and 3D segmentation of multi-organ and tumor abdominal CT scans.

Machine Learning Intern & CV Section Lead

June 2021 – December 2021

Tech for Good Inc

Boston, MA

- Programmed deep learning models in TensorFlow and PyTorch to detect distracted/impaired drivers in images/videos.
- Used custom and pre-trained CNNs to reach an accuracy of 99% for distinguishing between multiple classes of distracted and non distracted driving. Also tested with CNN-RNN architecture for video classification.
- Lead computer vision team on the project by overseeing all team operations and holding meetings. Lead collaboration with software engineering team to develop mobile application using Flutter.

RESEARCH

Shafin Haque, R. Austin McEver, “Box Prediction Rebalancing for Training Single-Stage Object Detectors with Partially Labeled Data,” *NeurIPS Workshop (NeurIPS LMRL)*, 2022

Shafin Haque, “CCTV Latent Representations for Reducing Accident Response Times.” *ACM International Conference on Computer Graphics and Virtuality (ICCGV)*, 2022

Shafin Haque*, Ayaan Haque*, “3N-GAN: Semi-Supervised Classification of X-Ray Images with a 3-Player Adversarial Framework.” *Preprint on arXiv*, 2021

Krish Maniar*, **Shafin Haque***, Kabir Ramzan*, “Improving Clinical Efficiency and Reducing Medical Errors through NLP-enabled diagnosis of Health Conditions from Transcription Reports.” *International Journal of Scientific Research (IJSRCSEIT)*, 2022

PROJECTS

WildfiresAI | Python, TensorFlow, Flask, HTML/CSS/JS

- Python web app for prediction various characteristics of wildfires with ML. Used neural networks, regression, and bounding box detection models. 4th place Congressional App Challenge 2021.

Pitch Prediction | R, Python, RShiny, TensorFlow, Caret

- RShiny app for predicting the next pitch in baseball based on current game scenario with R and Python. Wrote article published in TowardsAI documenting process.

EyesAight | Python, TensorFlow, Flask, Firebase, HTML/CSS/JS

- Flask app for detecting eye disorders and effects of treatment with Firebase backend. 4x hackathon award winner.

TECHNICAL SKILLS

Languages: Python, R, JavaScript/TypeScript, HTML/CSS, Java, C++

Technologies/Frameworks: TensorFlow, PyTorch/Lightning, LaTeX, CVAT, Git/GitHub, RStudio, RShiny, Flask, Vue/Nuxt.js, Google Cloud, Firebase, OpenCV, Pandas, PyLab, NumPy