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Yashasvi Baweja
Software Developer

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Focused software developer with hands-on experience in designing, enhancing and maintaining Python web applications & microservices on AWS cloud. Adept at building, training & deploying large scale machine learning models in PyTorch. Works well with teams and have experience owning end-to-end deliverables individually

EDUCATION

Johns Hopkins University (JHU)   GPA: 3.9/4.0 — Baltimore, MD
Master of Science (M.S) - *Electrical & Computer Engineering* — 2019 - 2022

Indraprastha Institute of Information Technology (IIITD)   GPA: 8.31/10.0 — Delhi, India
Bachelor of Technology (B.Tech) - *Computer Science & Engineering* — 2015 - 2019

SKILLS

Programming Languages	*Databases*	*Frameworks*	*Cloud(AWS)*	*Machine Learning*
• Python, Bash	• MySQL, PostgreSQL	• Flask, Django	• Lambda(Serverless)	• PyTorch, Tensorflow
• Java, SQL	• MongoDB	• Docker, Postman	• CloudWatch	• NumPy, Pandas
• C/C++	• DynamoDB(NoSQL)	• VSCode, Debugger	• Amplify	• OpenCV, Pillow
	• AWS RDS, S3	• Git	• CloudFormation	• Jupyter, Scikit-learn

EXPERIENCE

Python Developer / Data Platforms — **Sep 2022 — Present**
CalaHealth Inc — *Baltimore (Remote)*

- Built a new microservice in patient portal which improved securing the registration over previous workflow
  - Deployed a serverless function in *AWS Lambda* to sync new user data from Salesforce in *DynamoDB*
  - Utilized *jwt token* to verify signature in API to improve upon previous un-authenticated routine
- Created a REST API routine to assist research team in analysing logs
  - Spin up an *AWS EC2* instance to run a *Flask* app accepting logs from device base station(s)
  - Improved security of server by manually setting *iptables* to allow only tcp connections on specific port
- Ideated and developed RESTful microservices for the Health Care Personnel (HCP) dashboard
  - Demonstrated the importance of HCP portal by building individual microservices in *Docker*
- Provided support to implement multiple APIs & fixing bugs reported in other microservices written in *Python*

MLE Intern / Model deployment — **May 2022 — Sep 2022**
RIG Group Inc. — *Baltimore, MD*

- Led the team discussions to architect and train a deep learning model to detect chest disease(s) in x-ray
- Helped translate technical results directly to the upper management by writing easy-to-read code in *Jupyter(Google Colab)*
  - Utilized expertise in *PyTorch* to train model on NIH chest x-ray dataset
  - Built confidence in model predictions by performing 5-fold cross validation with *90%+* mean accuracy
- Took lead initiative to build an application from research idea by putting the trained model on cloud
  - Deployed the trained model on *AWS EC2* using *Flask* micro-framework
  - Created *AWS APIGateWay* to allow connections to EC2 on specific port from the web

Researcher / Face Anti-Spoofing — **Aug 2019 — May 2021**
Vision(ECE) Lab, JHU — *Baltimore, MD*

- Addressed challenge of detecting spoofs in face authentication videos using anomaly detection
  - Proposed a training framework with only real face data while detecting spoofs as anomalies
  - Reduced latency in algorithm by selecting only one image per 30 frames using *OpenCV*
  - Handled class imbalance in data by penalizing errors arising from under-sampled class
- *Published research at IJCB, 2020*
  - Received award for top 3 technical presentations

PROJECTS

Restaurant Hygeine classifier
JHU   *Baltimore, MD*

- Analysed 2021 data from Open Portal to find the best restaurants in San Francisco based on hygiene
  - Perform feature engineering on columns like business-location, zipcode, inspection score to find best features
  - Compared Random Forest, Decision Tree, Neural Network, k-NN & SVM classifier over 10-fold cross validation
- Gained insights that location alone is not a good predictor for hygiene

Voice2Face
JHU   *Baltimore, MD*

- Using Generative Adversarial Networks to create emotionally aware faces from voices
  - Implemented the paper "*Reconstructing faces from voices, Wen et. al*" in PyTorch
  - Added new auxiliary network which handles emotion along with speech signals

Periocular Recognition
IIITD   *New Delhi, India*

- Developed a novel loss for training CNNs in presence of data from different modalities
- Extended Triplet Loss by adding two branches(spectrum/resolution) to account for heterogeneity
- *Published research at BTAS, 2018*
  - Achieved State-of-the-art(10% improvement in EER) for periocular recognition

Face recognition on golf carts
IIITD   *New Delhi, India*

- Led R&D team in building face recognition system (written in Python) for Yamaha Research(Japan)
- Built a personalised greeting tool using Haar cascade for segmentation and LightCNN model for classification
- Enhanced content information over video frames using multiple score fusion techniques

Smart Glasses
IIITD   *New Delhi, India*

- Created a Raspberry Pie based headset to aid visually challenged in reading text by using Tesseract OCR
- Wrote scripts to integrate text-to-speech software like eSpeak for the output produced from OCR
- Added functionality of Face recognition for familiar faces using OpenCV

Landslide Prediction System
Indian Institute of Technology   *Mandi, India*

- Designed and assembled an Arduino based landslide prediction architecture
- Coded in C to periodically record sensor data like humidity, elevation & moisture
  - Configured a GSM module with the micro-controller to send site data to cloud
- Analysed the cloud data to predict the probability of landslide. Used previous years data for validation
  - Achieved minimum 96% accuracy across multiple classifiers like Logistic Regression, MLP, SVM & Random Forests

ACTIVITIES & AWARDS

- Recipient of 2019 Graduate Student Fellowship, ECE department, JHU
- Student mentor for Intl Conference: CVPR, 2022 (New Orleans, Louisana)
- Project Showcase finalist (Smart Glasses), Mini-Maker Fair @ IIITD
- Reviewer for IEEE Transactions Journal on Image Processing, 2022
- Top 3 awardee for best presentation at IJCB, 2020
- Honors student (Grade 12) - Recipient of national recognition letter for academic performance