ESHAAN VENKAT KIRPAL

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SUMMARY

Detail-oriented engineer with 4+ years of experience in industrial automation and software development. Proven track record of identifying operation bottlenecks and bringing changes that drive efficiency and profitability. Seeking opportunities to leverage my data modeling and image processing skills to ultimately design intelligent systems.

EDUCATION

Master of Science in Electrical Engineering | North Carolina State University, USA | GPA- 3.58/4 May 2019

Specialization: Computational Intelligence (Machine Learning and Artificial Intelligence)

Relevant Coursework: Neural Networks | Computer Vision and Deep Learning | Digital Imaging Systems | Pattern Recognition | Mechatronics | Artificial Intelligence | IoT Analytics | Analysis and Design of Algorithms | Detection and Estimation Theory

Bachelor's in Electrical and Electronics Engineering | BITS, Pilani-Dubai, UAE | GPA-7.8/10 Jul 2011

TECHNICAL SKILLS

Languages: Python, Matlab, C++, R, SQL, Visual Basic

Tools/Frameworks/Libraries: Pytorch, Keras**,** Tensorflow, .NET, OpenCV, Scikit-Learn, Scipy

Software and Cloud Services: Azure, Google Cloud Compute Engine, Amazon EC2, DataBricks, Tableau

PLC and SCADA systems: Siemens S7-300/400, AB ControlLogix, WinCC, Wonderware Intouch, FactoryTalk Studio5000

PROJECTS

Pneumonia Detection (Python, Tensorflow) Jul 2019

Implemented pre-trained VGG16 and ResNet models via transfer learning to classify pneumonia in chest X-ray images. Achieved F-1 score of 0.69. Currently developing object localization algorithm (YOLO) for localizing lung opacities in chest X-ray images.

Multi Object Tracking (Python, Pytorch, OpenCV) Jun 2019

Designed a tracking-by-detection framework to achieve real-time tracking of multiple pedestrians in a video. Utilized pre-trained Faster R-CNN model to localize pedestrians and designed Kalman filter and Hungarian algorithm to track pedestrians across frames.

Human Behavior Recognition (Python, Pytorch) May 2019

Designed detector for body-rocking behavior from blind subjects using inertial measurements (IMU) from wearable systems. Applied Random Forest, LSTM, and CNN-LSTM models to perform time series classification and obtained best F1 score of 0.76.

Laplacian Blob Detector (Python, OpenCV) Dec 2018

Detected scale- and rotation-invariant interest points in images by implementing a Laplacian of Gaussian filter. Limited the number of interest points by implementing a non-max suppression and a threshold module.

Face Detection (Python, OpenCV) Mar 2018

Developed a face detection technique using the Expectation Maximization algorithm on Mixture of Gaussian and T-distribution models, with an accuracy of 84%.

EXPERIENCE

Data Science Consultant | North Carolina State University - Libraries, Raleigh, NC Jan 2019 - May 2019

- Provided technical expertise and consultation to graduate and undergraduate students in the following fields: computer vision, time series, and natural language processing. Consultation services provided in conjunction with my graduate studies.
- Designed and delivered a workshop on "Getting Started with Kaggle Competitions", introduced students to machine learning ensemble techniques (Bagging, Boosting, and model stacking) used in Kaggle competitions.

Software Developer Intern | Hartness International, Greenville, SC May 2018 - Aug 2018

- Designed and developed an Azure-based IoT cloud solution for gathering and generating insights from robotic packaging systems.
- Achieved integration of Azure IoT services, existing .NET software, and distributed robotic sensors using MQTT protocol.
- Ideated and designed software-troubleshooting features using VB.NET thereby facilitating debugging of robot's HMI software.

Controls Engineer/Electronic Technician | Seadrill International, Thailand Dec 2014 - Oct 2015

- Averted *$14,500* on OEM services by analyzing, troubleshooting, and ultimately scaling the CCTV network on offshore rig *West Cressida* in the *Gulf of Thailand.*
- Lead the controls department and commissioned automated drilling machinery on newly built *rig West Titan* in *Dalian, China.*

Controls Engineer/Electronic Technician | Aban Offshore Pvt. Ltd., Persian Gulf, Iran Sep 2011 - Dec 2014

- Prevented operation downtime due to drilling server breakdown by implementing safety features within the drilling control system.
- Oversaw drilling and jacking operations and diagnosed automated machinery while training 4 engineers on rig *Aban-8*.