Umar Farooq Mohammad

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Education

Pennsylvania State University, University Park– PA, USA **Jan 2020 – Dec 2021 (Expected)**
Master's in Computer Science and Engineering *Cumulative* GPA: (3.6/4.00)
Related Coursework: Data Structures & Algorithms, Pattern Recognition & Machine Learning, Computer Architecture, Distributed Systems, Computer Vision, Natural Language Processing.

Osmania University, Hyderabad - Telangana, India **Aug 2014 - May 2018**
Bachelor of Engineering in Electronics and Communication Engineering. GPA: (8.7/10)

Skills and Tools

Programming Languages : C, C++, Java, Python, MATLAB, HTML, CSS, JavaScript
Technologies & Tools : Pega PRPC, AWS, Flask, Jira, Rally, Git, Postman, Jenkins, Docker
Frameworks : Bootstrap, Pega CRM, TensorFlow, REST API
ML Concepts : Regression, SVM, Feature Engineering, Word2Vec, CNN, RNN, Deep Learning
Certifications : Oracle Certified Java Programmer SE6, Pega Certified UI Specialist

Work Experience

1. ***Graduate Research Assistant*** **(Advisor: Dr. Almekkawy Mohamed)** **May 2020 – Present**
   - Working on motion tracking in ultrasound images using classical computer vision techniques & deep learning.
2. ***Associate System Architect, Pega Systems,*** **Hyderabad, India** **Jul 2018 – Dec 2019**
   - **Carlson Wagonlit Transport** Project which aims to develop a corporate travel booking application.
   - Worked on Localization to 6 languages, Configured Single Sign-on & session timeout using Apache Kafka, Okta. Experience in Application Version Control & Code Deployments to different environments.
   - Worked on AWS cloud for storing Email Transactions, Node.js for live dashboards.
   - Developed a utility that from a bulk excel upload creates POP3 & IMAP protocol email channels and fetches the contact details using the email address from the customer database using REST integration and Sentiment analysis enabled using Natural Language Processing. This saved the 80% of configuration time of environments during code deployments.
   - Developed a Payroll application for **Boston Consulting Group** which handles equity, payroll, & loan statements of employees from 60+ countries.
   - I worked features to live update of the statements, HTML to PDF generation, UI of Approval screens.
3. ***Internship Trainee, Pega Systems,*** **Hyderabad, India** **Jan 2018 – May 2018**
   - Trained in Software Application Development, Design thinking Agile & Scrum Methodologies. Delivered a project "Online Campus Placements Application" using Pega PRPC.

Academic Projects

- **3D Reconstruction using COLMAP:** – Python, MATLAB, CUDA, COLMAP sparse Reconstruction
  -> Implemented an Augmented reality viewer that displays an artificial object overlaid in real 3D scene.
- **Plant leaf disease classification using CNN:** – Python, PyTorch, Deep Learning
  -> Applied pre-processing techniques like segmentation & Thresholding to highlight the ROI. HOG feature extraction. Performed comparative experiment of Different CNN architectures like ResNet, AlexNet.
- **COVID-19-Disease-detection-using-Chest-Xray-Images** - Python, CNN
- **Integrating Kalman filter with Siamese FC for Object tracking** – MATLAB, CUDA, C++, Shell
  -> Improved the robustness against fast-paced object movement and Occlusion by updating the search space with the prediction using Kalman filter. The overall accuracy was improved from 78% to 92%.
- **Performance analysis of IRNSS in a moving vehicle**: Funded by ISRO, India – C++, MATLAB, LabView
  -> Worked for Undergraduate Theis on the performance of the IRNSS compared to GPS using dual frequency receiver on an moving vehicle with obstacles like tunnel, varying speeds & Dense forest areas.

Achievements

- Secured All India 32 rank in IEO (Indian engineering Olympiad).
- Secured All India 154 rank in National Educational Scholarship Test (NEST-II) 2017.
- Gold medal for regional best in IMO (International Mathematics Olympiad).

Selected Publications

- Design of SPI module using Verilog HDL Programming language in FPGA design flow – IJEDR1704175