**JAYALAKSHMI** **MANGALAGIRI**

E-mail: jmangal1@umbc.edu

Phone: +1614-973-0206

**MOTIVATION**:

To employ my current research skills and experience to get hands-on experience in solving business needs and learn the applications of AI to the IT industry.

**EDUCATION:**

**University of Maryland Baltimore County,** MD (August 2019-till date)

PhD in Computer Science GPA 3.47/4.0

**University of the Cumberlands,** KY (Jan 2018-April 2019 and transferred to UMBC (FALL 2019- PhD CS))

PhD in Information Technology GPA (as of April 2019): 4.0/4.0

**Youngstown State University,** OH

Master’s in Computing and Information Systems, August 2016 GPA: 3.82/4.0

**GITAM University,** INDIA

Bachelor’s in Information Technology, May 2014 GPA: 3.71/4.0

**TECHNICAL SKILLS:**

**Current Research Area:** Data Science andMachine Learning, Deep Learning, Medical Imaging, Computer-Aided Diagnosis.

**Programming/Scripting Languages:** C, C++, C#, SQL, JavaScript, jQuery, Machine learning with Python

**Databases:** SQL Server, MySQL

**Operating Systems:** Windows, Ubuntu, Linux, Mac

**Bug Tracking Tools:** Jira, Bugzilla

**Testing Framework/ Tools:** Selenium WebDriver/RC/Grid, Cucumber, Maven, Sikuli Automation Tool

**Tools & Utilities:** Microsoft Visual Studio, Eclipse, MS-Office (Excel, Word, PowerPoint), GitHub, Jupyter notebook, PyCharm, REPL, PyTorch, Tensorflow, python packages (scikit-learn, numpy, pandas, OpenCV, matplotlib, sciPy, Keras).

**PROFESSIONAL EXPERIENCE:**

*Teaching Assistant*

*University of Maryland Baltimore County, USA*

*August 2020- till date*

**Key Responsibilities:**

* Providing support and reinforcement for the professor and the lectures
* Holding office hours to have one-on-one session with student for lesson reviews/project/homework guidance
* Helping professors with attendance, grading and other administrative tasks
* Holding lectures in case of absence of professor

*Orientation Advisor*

*University of Maryland Baltimore County, USA*

*Office for Academic and Pre-*

*Professional Advising*

*December 2019-till date*

**Key Responsibilities:**

* Guiding the undergraduate students for enrolling into the classes
* Advising students on classes based on their major
* Understanding the student profiles and background
* Understanding the Maryland State rules for undergraduates to transfer their classes
* Working on evaluating the course equivalency for transfer credits
* Understanding the University requirements and guidelines for enrolling students

*Research Assistant*

*University of Maryland Baltimore County, USA*

*Vision Image Processing Algorithm Research (VIPAR) Lab*

*August 2019- till date*

**Key Responsibilities:**

* Performing literature reviews
* Conducting research and summarize the respective findings in the form of conference/journal papers
* Attending the project meetings
* Preparing progress reports/presentations on the on-going research and presenting to the audience
* Involving in multiple ongoing research projects and technically contributing to them.
* Submitting the research papers to relevant conferences for publishing the performed work.

*Software Developer Trainee*

*MeridianSoft Inc., USA*

*October 2016 – December 2017*

**Key Responsibilities:**

* Involved in the development and testing phases of the Software development life cycle (SDLC)
* Analyzed the SRS i.e., the software requirement specification document of the client. It actually describes all the requirements of the client in which everything is made detailed
* Maintaining technical documentations
* Gather and analyze application requirements
* Review existing code to understand structure and design of the system
* Coding in UI and application layers for enhancing the system application
* Identifying and adding new additional functionality and features to the existing application
* Perform bug fixes using C# .Net and related enterprise frameworks
* Performed various types of testing like regression testing, integration testing, functional testing, and load testing on the developed modules
* Enabling communication between various enterprise systems by working on web services and employing service-oriented architecture and protocols
* Performed database creations and wrote some database queries to retrieve the data from the created database
* Involved in writing the test-cases for some modules of the application.

*Software Developer*

*MeridianSoft Inc., USA*

*May 2016 - August 2016*

**Key Responsibilities:**

* Involved in the development and testing phases of the Software development life cycle (SDLC)
* Analyzed the SRS i.e., the software requirement specification document of the client. It actually describes all the requirements of the client in which everything is made detailed
* Based on the technical specifications, I have performed application coding for some modules
* Managed the web application maintenance and troubleshoot detected problems
* Developed and maintained some technical documentations for some modules in the application
* Reported problems and their solutions are inspected, documented and sent for review
* Developed some MS SQL server applications like views, triggers, and stored procedures
* Performed Unit testing on the developed code
* Involved in finding out the quality of the developed modules which is the testing phase
* Performed various types of testing like regression testing, integration testing, functional testing, and load testing on the developed modules
* Involved in writing the test-cases for some modules of the application

*Test Engineer*

*Outer labs, INDIA*

*July 2014 – March 2015*

**Key Responsibilities:**

* Understanding Software Requirement Specification and identifying required test scenarios for projects
* Performing Smoke, Functional, Regression and Retesting on the developed software applications
* Reporting, analyzing and prioritizing defects
* Developing Test cases, Test executions, Result analysis, Bug reporting and Bug tracking.
* Acquiring knowledge on all the stages of SDLC and STLC
* Working in AGILE environmental testing
* Defect Reporting and Tracking using tools like Jira and Bugzilla(3.2)
* Collaborating with other teams for dependencies in work
* Perform automation testing using SELENIUM

*Software Intern*

*Bluefrog mobile technologies, INDIA*

*May 2013 - June 2013*

**Key Responsibilities:**

* Handled five modules of the project related to the database
* Maintained the data dictionary which gives the list of all tables used in the system and their brief description
* Designed ER-models according to which the relationships are made between the tables

**RESEARCH PROJECTS:**

**Research Projects at UMBC (August 2019 – present)**

* Lung Nodule Classification (Malignant/benign) Using Biomarkers and 3D CNNs funded by NIH
* Robust Algorithm for Measuring Noise in Computed Tomography Examinations funded by UCSF
* Rapid Response Research (RAPID) grant from the National Science Foundation to detect COVID-19 infections earlier through computing and deep neural network
* An Intelligent Fault Tolerant Distributed Streaming Framework for Near Real-time Science Sensors and High-Resolution Medical Images funded by grant from NASA
* Toward Generating Synthetic CT Volumes using a 3D-Conditional Generative Adversarial Network funded by NSF.

**GRADUATE PROJECTS:**

1. **Graduate Project at University of Maryland Baltimore County (2019-2020)**

* Developed an architecture simulator for the MIPS computer to experience the design issues of advanced computer architectures through the design of an analyzer for a simplified MIPS CPU using python.
* Analysis of web server log files for session identification which focuses on a network security use case to analyze webserver log files for session identification.
* Designed a simple Distributed File System which is transparent, supports replication to be highly reliable and available and to be resilient in presence of node failures.
* Developed a service to predict diabetes using Machine learning algorithms like Random Forest, Decision trees, Naïve Bayes, used Heroku for cloud hosting and employed service-oriented principles.

1. **Graduate Project at Youngstown State University (2016)**

* Developed a web application project in my master’s degree called **MyTasks.com** where the application allows the users to store and manage projects and tasks with the associated projects using ASP.NET MVC 5.0, C#, Razor engine for presentation, SQL Server, Visual Studio 2013, jQuery, AJAX, Entity Framework, Forms Authentication and Bootstrap. I had also implemented the authentication and authorization in this project to allow the users to sign on.

1. **Undergraduate Projects at GITAM University (2014)**

* As part of Summer Internship, I have done a project named **Offset Real Time System** which is a government project where it handles all the local municipality issues and manages the staff of the municipality in assigning duties for everyone depending on the area of their work. This project is developed in C# language.
* Led a project named **Framework for Clustering concept drifting categorical data** where me and my team proposed a framework to perform clustering on categorical time evolving data. The framework detects the drifting concepts at different sliding windows, generates the clustering results and shows the relationship between the clustering results by visualization.

**CONFERENCES ATTENDED:**

* SPIE Medical Imaging 2020**,** Houston, Texas, United States, February 15-20,2020.
* The 2020 International Conference on Computational Science and Computational Intelligence (CSCI’20), Las Vegas, USA, December 16-18, 2020.
* 2021 IEEE International Conference on Big Data, Dec-15 2021 (Virtual)

**PUBLICATIONS & POSTERS:**

1. J. Mangalagiri, D. Chapman, A. Gangopadhyay, Y. Yesha, J. Galita, S. Menon, Y. Yesha, B. Saboury, M. Morris, P. Nguyen, “Toward Generating Synthetic CT Volumes using a 3D-Conditional Generative Adversarial Network”, The 2020 International Conference on Computational Science and Computational Intelligence Symposium on Health Informatics and Medical Systems (CSCI-ISHI), Las Vegas 2020.
2. S. Menon, J. Galita, D. Chapman, A. Gangopadhyay, J. Mangalagiri, P. Nguyen, Y.Yesha, Y.Yesha, B.Saboury, M. Morris, “ Generating Realistic COVID-19 X-rays with a Mean Teacher + Transfer Learning GAN. IEEE BigData 2020. *arXiv preprint arXiv:2009.12478*. <https://arxiv.org/abs/2009.12478>
3. Mehta, K., Jain, A., Mangalagiri, J., Menon, S., Nguyen, P., & Chapman, D. R. (2020). Lung Nodule Classification Using Biomarkers, Volumetric Radiomics and 3D CNNs. Journal of Digital Imaging. *arXiv preprint arXiv:2010.11682*. <https://arxiv.org/abs/2010.11682>
4. Mehta, K., Jain, A., Mangalagiri, J., Menon, S., Nguyen, P., & Chapman, D. R. (2020). Lung Nodule Malignancy estimation of CT scans combining image biomarkers with 3D CNNs. Society for imaging informatics in medicine (SIIM) 2020. <https://siim.org/page/20m_p_lung_node_malignancy>
5. Gajera, B., Kapil, S. R., Ziaei, D., Mangalagiri, J., Siegel, E., & Chapman, D. (2021). CT-Scan Denoising Using a Charbonnier Loss Generative Adversarial Network. *IEEE Access*, *9*, 84093-84109.
6. S. Shivadekar, J. Mangalagiri, R. Gite, P. Nguyen, D. Chapman, and M. Halem, “An Intelligent Parallel Distributed Streaming Framework for near Real-time Science Sensors and High-Resolution Medical Images,”

Accepted for the ICPP’21 workshop proceedings.

1. Mangalagiri, J., Sugumar, J. S., Menon, S., Chapman, D., Yesha, Y., Gangopadhyay, A., ... & Nguyen, P. (2021, December). Classification of COVID-19 using Deep Learning and Radiomic Texture Features extracted from CT scans of Patients Lungs. In *2021 IEEE International Conference on Big Data (Big Data)* (pp. 4387-4395). IEEE.

**RESEARCH ACHIEVEMENTS:**

1. Poster on "LUNG NODULE MALIGNANCY ESTIMATION OF CT SCANS COMBINING IMAGE BIOMARKERS WITH 3D CNNS" has won 2nd place in the SIIM 2020 Research Poster Award.

**ACTIVITIES and INTERESTS:**

* Self-motivated with good team attitude, detail-oriented, organized and take keen interest in problem-solving and trouble-shooting challenges.
* Always interested in learning and exploring new things in a technical aspect.
* To have a cutting edge over others, I always keep myself updated with technology by browsing online as well as reading books and journals.
* Involvement in reading current research papers of my interest and storing them.
* Interested in participating in social events and volunteering services.

**VOLUNTEER WORK, COMMUNITY INVOLVEMENT, ASSOCIATION MEMBERSHIPS:**

* An active member of ISTE (Indian Society of Technical Education) student forum of GITAM University.
* An active member of CSI (Computer Society of India) at GITAM University.
* An active member of NSS (National Service Scheme) at GITAM University.
* Was a part of organizing committee of GITAM University student activity center and conducted many events in University Fest.
* Was in advising undergrad students during their orientations.
* Was in tutoring undergrad students.
* Was working as an Office assistant to assist students and faculty formally.