

# DOMMETI DHIREN SAI DATTA RAO

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## Education

### Clark University

Aug 2023 – Dec 2024

*Master of Science in Computer Science, GPA: 3.86/4*

*United States*

- Independent Research: Worked under Professor Rand Alfariis on an Integrated Multimodal Approach for Emotion Recognition, which was published in the Open Access Journal of Criminology Investigation and Justice.

### KL University

2019 – 2023

*Bachelor of Technology in Computer Science and Engineering, GPA: 9/10*

*India*

## Skills

**Languages and Databases:** Java, Python, C#, MongoDB, PostgreSQL, SQL

**Web Technologies:** HTML, CSS, JavaScript, Angular, React, Node JS, .Net, Flask, Django, REST APIs

**Technologies:** Jenkins, Git, Jira, Jama, Ansible, Selenium, UiPath, Automation Anywhere, BluePrism, AWS, Azure, GCP

## Experience

### Academy Instructor

May 2024 – Aug 2024

*ID Tech at Massachusetts Institute of Technology (MIT)*

- Led the development and delivery of **ACADEMY NEXT**, iD Tech's most advanced course at MIT, covering **Python, AI/ML, SPHERO RVR, Raspberry Pi, NVIDIA Jetson Nano, and Game Design**
- Created an immersive, project-based learning environment where students tackled real-world tech challenges
- Developed a practical curriculum focused on **neural networks, image classification, object detection, API integration, AI and Generative AI, web development, and Python**
- Implemented **CI/CD techniques** to streamline project workflows and maintain high-quality code delivery.
- Integrated the curriculum with **testing and quality assurance methodologies**, including **Selenium and integration testing for REST APIs**
- Received excellent feedback, and led **sprint meetings** to ensure clear communication and progress tracking

### Robotics Process Automation Virtual Internship

Oct 2021 – Dec 2021

*Supported by Blue Prism, Organized by EduSkills Foundation and AICTE*

- Networked with industry experts to enhance professional skills, automated Excel sheets for data management, and streamlined repetitive tasks, improving efficiency and accuracy

### Web Application Pentester

Aug 2021 – Oct 2021

*Indian Servers*

- Gained hands-on experience in performing **automated and manual Vulnerability Assessment and Penetration Testing (VAPT)** on web applications, while also gaining exposure to malware analysis, forensics, and network security
- Actively enhanced **web security audits**, delivering effective results in identifying and mitigating vulnerabilities

### Cyber Security Virtual Internship Program

May 2021 – Aug 2021

*Supported by Cisco Networking Academy, AICTE*

- Spearheaded the design of a secure network under the guidance of the faculty coordinator, leveraging the Packet Tracer Simulation program to implement robust security measures

## Projects

### Card Game with Physical Card Recognition | *Python, Flask, Raspberry Pi, NVIDIA Jetson Nano, Playwright* 2024

- \* Leveraged Raspberry Pi for real-time card detection and algorithms for card identification
- \* Built a Flask-based application to manage game sessions and card interactions, enabling seamless online multiplayer gameplay
- \* Implemented the solution on NVIDIA Jetson Nano for enhanced processing performance across multiple hardware platforms
- \* Conducted extensive testing using **Playwright** to ensure reliable card recognition and smooth gameplay across various devices

### Fingerprint Forensics: Regeneration and Gender Prediction | *Python, Flask, Deep Learning* 2023

- \* Developed a Flask-based application for restoring smudged fingerprint images and predicting gender using advanced image processing techniques
- \* Applied Gabor Filters and Otsu's Method for image enhancement, improving fingerprint clarity and analysis
- \* Integrated machine learning algorithms to predict gender based on fingerprint data, offering a comprehensive solution for fingerprint analysis

<b>Identification of Deepfakes using Strategic Models and Architectures</b>   <i>Python, Flask, Deep Learning</i>	<b>2023</b>
<ul style="list-style-type: none"> <li>• Built a flask-based application to detect deepfake in multimedia using neural networks, helping to protect users from potentially malicious and deceptive content</li> </ul>	
<b>KL-ATLAS a University Map/Guide</b>   <i>Java, Hibernate, JSF, Spring</i>	<b>2021</b>
<ul style="list-style-type: none"> <li>• Developed a user-friendly application that enables users to explore different areas of the university and obtain information on faculty/staff</li> </ul>	
<b>Agricultural Management System</b>   <i>Python, Flask, SQL, Data Science, Machine Learning</i>	<b>2021</b>
<ul style="list-style-type: none"> <li>• Developed a website with real-time crop price forecasts and resources for farmers</li> <li>• Achieved recognition for excellence by winning KL University's prestigious SDP-2 Hackathon</li> </ul>	
<b>Enterprise Resource Planning System for students</b>   <i>Python, Flask, SQL, Node.JS, PostgreSQL, RPA</i>	<b>2020</b>
<ul style="list-style-type: none"> <li>• Engineered a robust ERP application system in just two weeks to meet critical real-time deployment requirements</li> <li>• Successfully managed complex queries in the back-end of the system, ensuring smooth and error-free operations</li> <li>• Implemented testing methodologies, including both <b>automation and manual testing</b>, to ensure comprehensive quality assurance</li> </ul>	

## Publications/Academic Service

- **DV Emotion Net: An Integrated Multimodal Approach for Emotion Recognition** 2024 Open Access Journal of Criminology Investigation and Justice. URL: [10.23880/oajcij-16000112](https://doi.org/10.23880/oajcij-16000112)
- **Repercussions of Incorporating Filters in CNN Model to Boost the Diagnostic Ability of SARS-CoV-2 Virus Using Chest Computed Tomography Scans.** Lecture Notes in Networks and Systems, vol 558. Springer. doi: [https://doi.org/10.1007/978-981-19-6880-8\\_22](https://doi.org/10.1007/978-981-19-6880-8_22)
- **Comparative Stratification of Steganalysis Techniques to Interpret Target Anomalies** 2022 International Conference on Automation, Computing and Renewable Systems, doi: <https://doi.org/10.1109/icacrs55517.2022.10029147>
- **Identification of Deepfakes using Strategic Models and Architectures** , 2023 International Conference on Sustainable Computing and Data Communication Systems, doi: [10.1109/ICSCDS56580.2023.10104880](https://doi.org/10.1109/ICSCDS56580.2023.10104880).
- **Deep Learning Based Lumpy Skin Disease (LSD) Detection**, 2023 3rd International Conference on Smart Data Intelligence, doi: [10.1109/ICSMDI57622.2023.00087](https://doi.org/10.1109/ICSMDI57622.2023.00087).
- **Revolutionizing Fingerprint Forensics: Regeneration and Gender Prediction with Gabor Filters, Otsu's Technique, and Deep Learning**, 2023 Second International Conference on Augmented Intelligence and Sustainable Systems, doi: [10.1109/ICAISS58487.2023.10250459](https://doi.org/10.1109/ICAISS58487.2023.10250459).
- **Unleashing the Power of VGG16: Advancements in Facial Emotion Recognition.** International Journal on Recent and Innovation Trends in Computing and Communication. URL: <https://ijritcc.org/index.php/ijritcc/article/view/8559>
- **Leveraging Deep Learning for Accurate Detection and Precise Localization of Vertebral Fractures in Medical Imaging**, 2023 4th International Conference on Smart Electronics and Communication, doi: [10.1109/ICOSEC58147.2023.10275972](https://doi.org/10.1109/ICOSEC58147.2023.10275972).
- **A Framework for Detection of Overall Emotional Score of an Event from the Images Captured by a Drone.** In Advances in Aerial Sensing and Imaging. URL: <https://doi.org/10.1002/9781394175512.ch10>
- **Engineering Applications of Artificial Intelligence** - Reviewed 5 manuscripts since April 2023

## Activities

<b>Technical Operations Specialist</b>	<b>2024</b>
<i>International Conference on Mathematical Modeling in Computational Intelligence and Generative-AI</i>	
<b>Student coordinator, Host, and Bot Developer</b>	<b>Jul 2022</b>
<i>Fifth International Conference on Smart Technologies In Data Science and Communication</i>	
<b>Host and Bot Developer</b>	<b>Sep 2021</b>
<i>Second International Conference on Machine Intelligence and Soft Computing</i>	
<b>Bot Developer</b>	<b>Feb 2021</b>
<i>Fourth International Conference on Smart Technologies In Data Science and Communication</i>	
<b>Undergrad Peer Mentor's Leader</b>	<b>Jun 2020 – Mar 2023</b>
<i>KL University</i>	