

SUNDEEP PIDUGU

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EDUCATION

University of North Carolina at Charlotte

Master of Science in Cybersecurity

Charlotte, North Carolina, USA

August 2021 - Current

Vellore Institute of Technology

Bachelor of Technology in Computer Science and Engineering (GPA: 7.43/10)

Chennai, India

June 2013 - May 2017

Ascent Junior College

Board of Intermediate Education (Percentage: 87.5)

Andhra Pradesh, India

June 2011 - March 2013

Bhashyam Public School

Board of secondary education (Percentage: 90)

Andhra Pradesh, India

April 2010 - March 2011

WORK EXPERIENCE

April 2019 - Current

Senior Software Engineer at Pagemajik

Working on using cutting edge technologies to provide high performance secure web applications for publishers, my responsibilities include performing vulnerability assessment and penetration testing on the core application, Developing multiple client and server side node js applications. Building Machine Learning models to extract meaningful information from unstructured data for application such as Key Phrases identification, Auto page layouting etc. Worked on building a neural network for question-answering systems and Photo forensics in python.

July 2017 - March 2019

Software Engineer at Intellect Design Arena Ltd

Worked on various products and challenges which include designing and developing many applications that improve usability and reduce the time of operation for clients. Being a core member of the **Innovation Team** helped me work on challenging projects which includes creating a document generator tool with the custom rule engine using several technologies such as Extjs, Flask and Java.

May 2017, August 2016

Web developer Intern at StudyMarvel and Eventzé

Worked as a front end developer to create a single page responsive web application and implementing new functionalities using JavaScript frameworks and material design.

December 2016

Full stack Web developer Intern at Mr. Hot Foods

Worked as a full stack developer to improve the usability of the existing interface for ordering food online and redesign several components to material design and handling respective business functionality services implementation for several modules in PHP using MySQL.

TECHNICAL EXPERTISE

- **Programming Languages** : JavaScript, Python, SQL, Java, R, C++.
- **Web Programming** : Extjs, Vue.js, CSS, HTML, PHP, Bootstrap.
- **Data Science Libraries (Python)** : scikit-learn, NLTK, OpenCV, TensorFlow, Pandas, NumPy, Matplotlib.
- **Database** : MySQL, MongoDB, ElasticSearch.

- **Security Testing tools and softwares:** Burp Suite professional, OWASP ZAP, metasploit, masscan, nikto, Dynatrace.
- **REST Frameworks** : NodeJS, flask, CherryPy.
- **Cloud Platforms** : AWS, Google cloud.
- **Mobile** : React Native, Flutter.
- **Versioning tools** : Git, SVN.
- **Others** : Pentesting, Sonarqube, Apache Spark, UI Path, Indesign scripting.

PROJECTS

Vulnerability assessment on Pagemajik: Responsibilities include testing the core modules for any security vulnerabilities and reporting to the concerned team. Reported several vulnerabilities such as outdated 3rd parties libraries, server side misconfiguration, Server-side request forgery (SSRF), accessing sensitive pages and files without authentication (IDOR) and some code implementation specific flaws.

- Key Tools: **Pentesting, BurpSuite, OWASP ZAP, metasploit, masscan, nikto, Dynatrace, Sonarqube.**

EzType: Built a nodejs application which automates typesetting tools that creates near-perfect InDesign pages from Word manuscripts without any human intervention.

- Key Technologies: **Nodejs, Indesign scripting, Indesign server and LBA(load balancing and job queueing).**

Intellisync: Built an asset management application using NodeJS which facilitates designers to download relevant files and make modifications and update the upload the same to reflect on the CMS(Content management System).

- Key Technologies: **OpenCV, scikit-learn, TensorFlow, Pandas, Pillow(PIL), NumPy.**

Digital Image forensics: Built Deep learning model to identify and detect forged images using various image processing algorithms and computer vision toolkits for inhouse images to find duplicate images and assess the duplicity of any given digital image.

- Key Technologies: **OpenCV, scikit-learn, TensorFlow, Pandas, Pillow(PIL), NumPy.**

Automatic design page layouts: Worked on building machine learning models that use reinforcement learning to automatically provide the best single page layouts for documents and brochures using python.

- Key Technologies: **scikit-learn, CUDA, TensorFlow, Pandas, Pillow(PIL), NumPy.**

Keyphrase Extraction: Built a stacked machine learning model using scikit-learn and leveraging AllenNLP's deep learning libraries and deployed on AWS that can extract meaningful key phrases from any unstructured document and enhance the discoverability of the content.

- Key Technologies: **scikit-learn, Allennlp, Pandas, AllenNLP, Matplotlib.**

Indesign generator: Automated indesign scripts with ExtendScript to generate the best page formatting for the author books to generate an Epub file. Also worked on improving the indesign server performance with inhouse tools to monitor the processes

- Key Technologies: **Indesign scripting, Indesign server configurations.**

Corpus Annotation: Built a system that streamlines the analysis of client documents and applying several stages of processing and storing them into elasticsearch. Developed an interface to provide the users with the capability to annotate domain-specific labels in client documents which will be later used as training data for various ML algorithms.

- Key Technologies: **MaterializeCSS, Elasticsearch, Kibana, MongoDB, CherryPy, Amazon Kinesis firehose.**

Integrated Data Store and Load Optimisation: Built a system that analyzing and understanding various formats of feed files from several data sources using Apache Spark to store client data into a centralized MongoDB collection at various hierarchies and to apply analytics on top of the data at any particular level required. Optimized the load time for various stored procedures on DWH using apache sparks parallel processes and take advantage of its in-memory storage and computations

- Key Technologies: **Apache Spark, Java, MongoDB, SQL server.**

Intelligent Business Assurance: Built a proprietary application that helps to analyze all partner advisory documents using several deep learning algorithms to answer questions on whether to approve or reject particular advice given by the partner. Understanding the domain-specific keywords using snorkel and developing a rich user interface that

shows the status across various stages for each document and also has provision for rules to configure the business compliance and regulatory changes and a detailed report upon completion.

➤ Key Technologies: **Extjs, Amazon S3, Snorkel, Sci-Kit Learn.**

Smart Contract for Insurance (Innovation Challenge): Built a Smart Contract application for hassle-free and fastened the claim process for baggage delay in airports which includes blockchain to trigger contracts and IoT devices to automate the baggage tracking and Machine learning models to provide personalized premium amounts for the travelers.

➤ Key Technologies: **HyperLedger, Materializecscs, IoT devices for tracking, Pubnub, Arduino.**

Document Generator: Built an elegant web application with rich functionalities include a plugin API to integrate with any internal or external data sources and a highly configurable rule engine where complex rules for tabular data can be applied for any kind of document template with just simple drag and drop to generate a pdf document where final documents are rendered on the runtime with configured rules which complement the requirements of the client with product simplicity.

➤ Key Technologies: **Extjs, EvoPdf, MongoDB, Java.**

CERTIFICATIONS

- eJPT - eLearnSecurity Junior Penetration Tester - Id : 4521987

RESEARCH PUBLICATIONS

“AI based E-Healthcare in Rural Areas” - Focussed on helping authorities to make crucial decisions in critical situations for providing compassionate healthcare services to rural areas using artificial intelligence.

➤ International Journal of Innovative Technology and Exploring Engineering (IJITEE), 9.3(2020): 3098-3104.

“Intelligent System for Smart Cultivation- to Integrate Technology in Rural Economic Development” - Focuses on improving agricultural practices with the help of technology in terms of machine intelligence with smart cultivation for crop production and management

➤ International Journal of Engineering and Advanced Technology (IJEAT), 9.3(2020): 511-517.

EXTRACURRICULAR ACTIVITIES

- First to report a high severity vulnerability which lets students on **“Magoosh”** access paid content for free and responsibly report to the concerned team and got appreciation.
- Rewarded for **“Continued Hard Work, excellent service and being a role model for my peers”** by **Saurav Ganguly**, a veteran cricket player and the President of the Board of Control for Cricket in India (**BCCI**) and Directors of St. James's Place and Intellect.
- Ranked at **top 0.5%** across the world in TryHackMe (Website which provides cyber security training).
- Winner of **“DX challenge 2017”**, held at Intellect design arena.
- **Finalists** at innovation challenge for **“Smart Contract for Insurance”**.
- An active member of **Ullas Trust, NCC**, and several Corporate social responsibility(CSR) events. Event Organizer for many competitions.