Siddharth Goyal

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Education

- **Masters of Science - Computer Science** — December - 2023
  Arizona State University — *GPA: 4.11/4*
- **Bachelors of Technology - Computer Science** — June 2021
  SRM Institute of Science and Technology — *GPA: 8.7/10*

Skills Summary

- **Languages**: Python, C++, JAVA, SQL, JavaScript, HTML, CSS, MATLAB, Linux
- **Frameworks and Libraries**: Scikit-learn, TensorFlow, Keras, OpenCV, NumPy, MatplotLib
- **Technology**: VS Code, Pycharm, Google Colab, Anaconda, Jupyter Notebook, GIT, Raspberry Pi,
- **Platforms**: Linux, Windows, AWS cloud services
- **Relevant Coursework**: Database Management System, Python Programming, C++ Programming, Data Structures, Algorithm Design and Analysis, Foundations in Algorithm, Deep Learning, Data Mining, Software Developer

Experience

- **Volunteer Research Assistant** — November 2022 - March 2023
  Lab V2 - Arizona State University — *Tempe, Arizona, USA*
  - Involved in developing introspection modules for scene graph detection and generation task.
- **Graduate Teaching Assistant - Software Validation Verification and Testing** — August 2022 - July 2023
  Arizona State University — *Tempe, Arizona, USA*
  - Assisting Dr. Tuzmen in teaching, grading the assignments and preparing and revamping teaching materials for a class of 125+ students.
  - Conducted weekly office hours to give guidance to grad students on various topics like Specification based testing, structural based testing.
- **Intern - Software Developer** — August 2021 - November 2021
  Tata Consultancy Services (TCS) — *Gurugram, India*
  - Was involved in developing scalable backend system for a UK-based e-commerce company using Microsoft Power Apps and Java. I was specifically involved in developing and integrating the order processing module.
- **Intern - Software and Machine Learning Developer** — June 2019 - July 2019
  Indian Institute of Technology-Kanpur (IIT Kanpur) — *Kanpur, India*
  - Developed an autonomous road sign detection model using YoLo-v3 and deployed it on Raspberry Pi. Used TensorFlow to implement the model
  - Lead a team of 7 undergrad students to divide and coordinate the work and delivered the final presentation.

Projects

- **InsructABSA**: Developed state of the art approach using encoder-decoder based LLMs using instruction tuning for the aspect based sentiment analysis task. The paper has been submitted for peer-review.[GitHUb Link]
- **NLP Model Benchmarking**: Created a benchmarking dataset to evaluate the performance of the large language models (LLM). Demonstrated the areas in which LLMs underperformed like non numerical, attribute comparison and time varying statements. Wrote a paper on the findings, which got accepted at EACL '23 conference. [ArXiv Link]
- **Satellite Image Segmentation**: Developed a real-time deep learning based satellite image segmentation model to segment different features such as land, water, and vegetation etc. This project involved the use of SOTA models such as MaskRCNN, UNet and DeepLab V3. The model had an IoU score of 94%.
- **Twitter Bot Detection using Transformers**: Developed a Twitter bot detection system using the BERT transformer model. The system analyzed user behavior patterns and tweet content to identify and classify bots, providing insights into social media manipulation and improving platform security.
- **Detection of disease in crop using Deep Learning**: Developed a CNN based classification model to detect crop diseases in input images. The model took images of crops as input and outputs the disease type and confidence score. Used TensorFlow to implement the model.

Leadership Experience

- Leading a group of 8 members to complete a class project on fake Obstacle detection by Autonomous Vehicles.
- Lead a team of 7 members to successfully complete a class project on Twitter Bot detection using Transformers.
- Managed a team of 7 members during my Internship at IIT Kanpur and received the 3rd best project award.

Courses and Certification

- **Specialization in Machine Learning** — Coursera
  Supervised Machine Learning, Advanced Learning Algorithm, Unsupervised Algorithm-Course by Andrew Ng
- **Introduction of AI and IOT** — IIT kanpur
  Training program conducted by professor Laxmidher Behra